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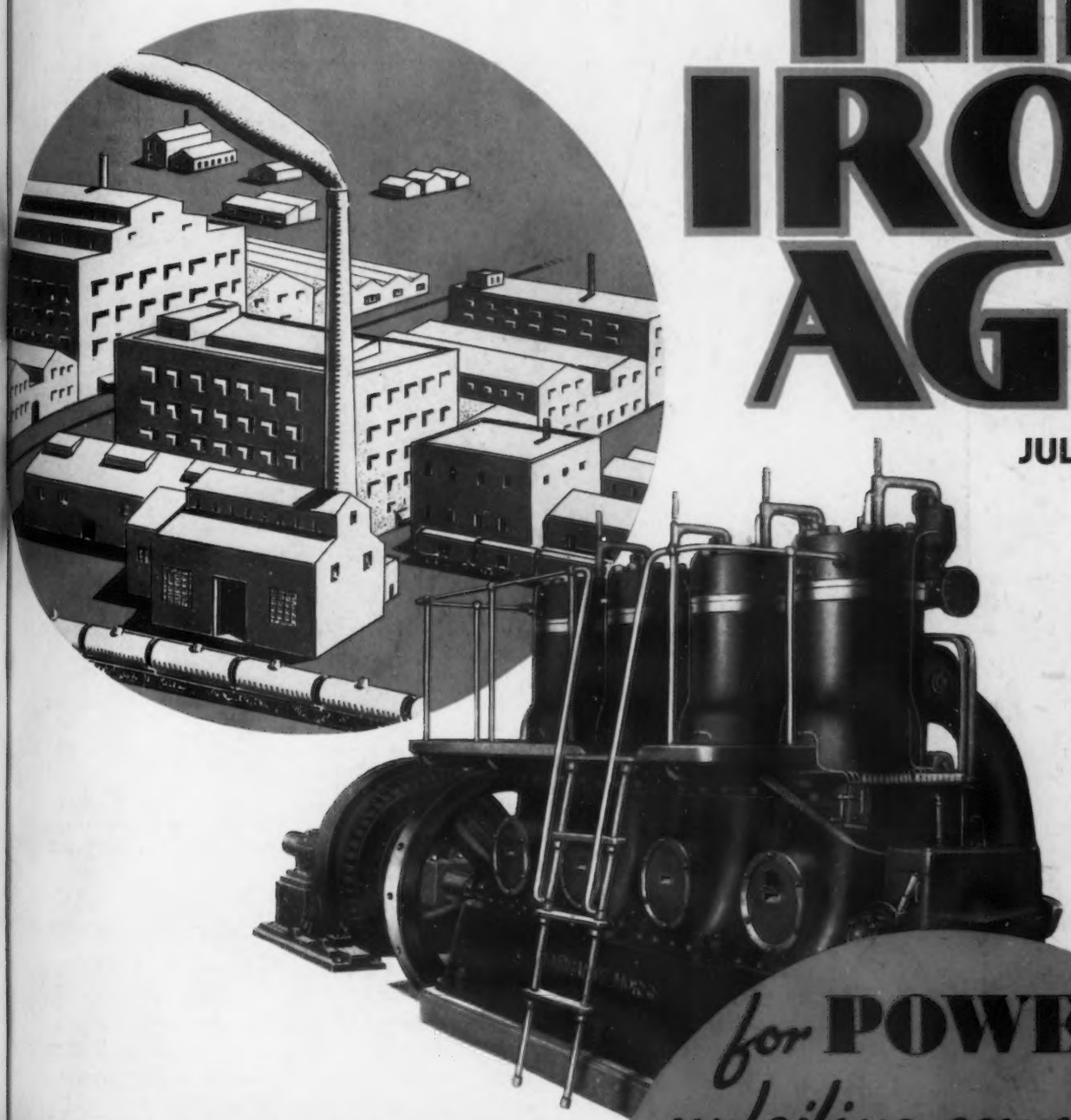
THE IRON AGE

JULY 30, 1936



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THE IRON AGE

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JULY 30, 1936

ESTABLISHED 1855 Vol. 138, No. 5

I WONDER . . .

if Radicals are really Conservatives

WE usually think of the defenders of a capitalistic system as "conservatives" and lump the advocates of socialism and communism as "radicals." And yet I wonder if we haven't exactly reversed our definitions . . . if the radicals are not the real conservatives.

In terms of a single life-span, capitalism is an old and firmly rooted system. For 400 years it has spread until today we accept the title of "conservative" without question. As compared to that record, modern communism has been tried on a grand scale only since 1918 . . . and it is still on trial. That is why all of us think of it as new and "radical."

But communism goes back far beyond the dawn of history. Turn to the scholars in the field of primitive human origins . . . read any of the authoritative books on the subject . . . and you find evidence that communism existed in almost every primitive society. Visit any truly uncivilized portion of the globe today and you will find communism in actual operation. Only when civilization . . . ambition . . . a desire for personal betterment . . . have touched a people do we find communism abandoned in favor of some other plan which gives scope to individual initiative.

That is why the real reactionaries are the disciples of Marx and Lenin. The true radicals are the men and women who insist that the capitalistic system has given us more actual benefits and greater security for the average man within the last 400 years than did any and all other systems in the previous 8,000 years.

I wonder if America will continue on the road of progress . . . even though it be rough at times . . . or turn back to a system typical of humanity in its infancy.

CHARLES E. MOORE
President, Moore Machinery Co., Los Angeles.

Reprinted from July issue of *Moore Momentum*

NORMALIZING TUBES IN ATMOSPHERE

By FRED L. PRENTISS
Cleveland Editor, The Iron Age

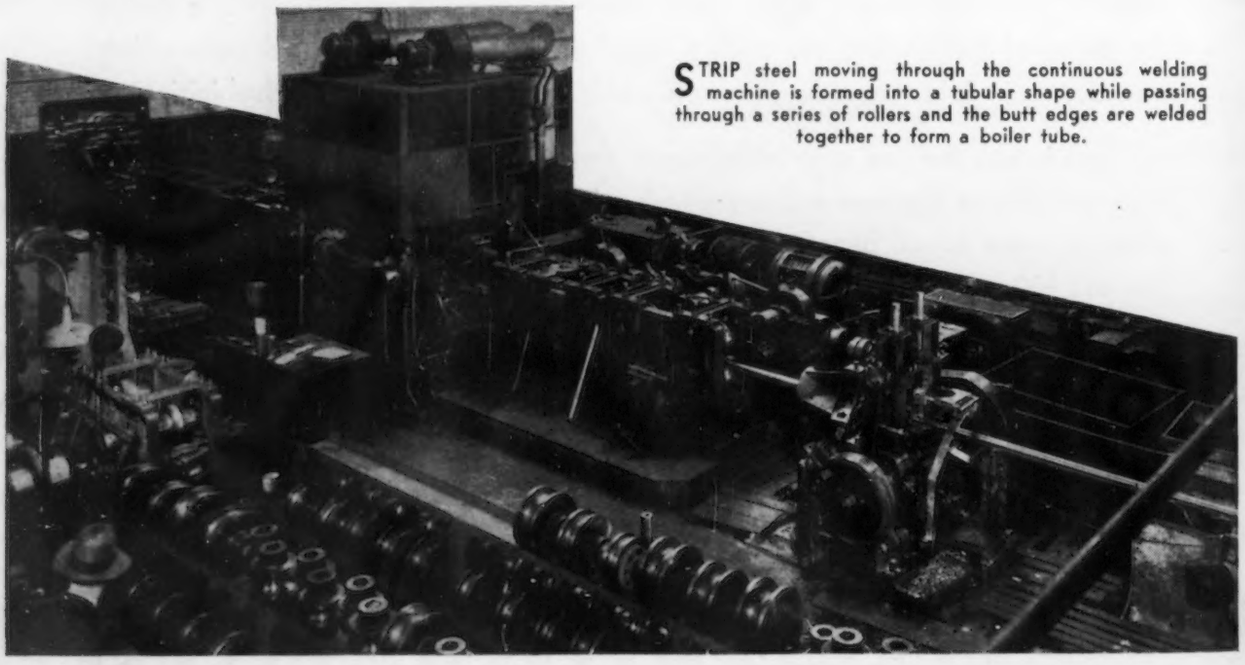
STEEL tubing for boilers and other pressure purposes manufactured by the electric resistance welding process is now normalized in a controlled atmosphere continuous electric furnace by Steel and Tubes Inc., subsidiary of Republic Steel Corp., in its Cleveland plant. This development in production processes has been made in connection with the company's recent expansion program, which included the erection of a large extension to its plant and the installation of furnace and other equipment. The new structure is connected to the main factory building and is used for processing, storage and shipping.

Before the installation of the new furnace equipment, the tubes were normalized after welding in an ordinary electric furnace and then air cooled. Pickling to remove the scale followed heat treatment. To produce tubing absolutely free of scale without the necessity of pickling (although normalized above 1650 deg. F., the critical point of the steel), and to improve the finish and surface of the product, the use of a controlled atmosphere normalizing furnace was adopted. Incidentally, the plant is kept free from the sulphuric acid fumes that formerly came from the pickling tanks.

The normalizing furnace is said to be the largest controlled atmosphere continuous furnace that has been built and one of the first to be used for the continuous heat treating of steel tubing.

The advantages of a tube entirely free from mill scale on both the inside and outside surfaces have long been recognized. If it were possible to obtain a tube on which the scale or iron oxide covers the entire surface of the tube with no possibility that any of the scale would chip off during installation or in service, it would be highly resistant to corrosion. Most steel boiler and other pressure tubes are formed hot, and scale is produced during the forming operation. Such scale is not uniform over the entire surface and this gives an opportunity for selective corrosion or pitting due to the electrolytic action caused by the difference of potential between the iron oxide and parent steel. There is also danger that such scale may cover up and hide defects in the steel.

Scale may be removed by pickling or sandblasting or in some cases by cold working. Many users, particularly among the utility companies, order boiler tubes with scale removed by one of these methods. A perfectly clean surface is particularly important when the tube is used in refrigeration equipment as some refrigerants have a strong tendency to remove scale from the surface of the tube, causing poor circulation in the unit or even an actual obstruction in the line of mechanism.



STRIP steel moving through the continuous welding machine is formed into a tubular shape while passing through a series of rollers and the butt edges are welded together to form a boiler tube.

IN CONTROLLED FURNACES....

IN what is said to be the largest controlled atmosphere continuous normalizing furnace yet built, steel tubing is produced free from scale and without pickling. The process is operated by Steel & Tubes, Inc., a subsidiary of Republic Steel Corp., in new plant structures which are a part of the company's recent expansion program.

It has long been recognized that uniformity, not only of gage, but also of diameter of surface inside and out, and of the microstructure and temper, are very desirable features in boiler and other pressure tubes. The manufacturing processes followed in making electric resistance welded tubing produce a product that seems to possess all of these essential features with a high degree of uniformity. The wall thickness, diameter and out-of-round conditions are held to close limits and the inside and outside of the tube is free of scale. Microstructure at the weld is slightly changed and the tube is slightly harder at the point of welding.

The method by which the tubes were made heretofore has not been changed. The Johnson continuous welding process is followed, this including forming, welding and sizing immediately after welding.

The metal is hot rolled open-hearth, pickled to remove scale and then sheared on both edges by being passed through a pair of rotating circular shears to assure a tube of the proper diameter. The variation in the gage of the strip at any cross-section rarely exceeds 0.003 in. and as subsequent operations have practically no effect on the wall thickness, a concentric tube is assured.

The strip is cold formed into a butted tube by passing through a series of rolls and the formed tube then passes through a series of rolls and the formed tube then passes through the welding unit which joins the butted edges. The cold rolling action in forming and sizing the tubes improves the original high grade surface.

Chemically the steel is not altered by the welding operation, because the heat generated by the resistance of the butted joint to the flow of high amperage current and pressure completes the weld without the addition of any extra metal. The amount of metal extruded both inside and outside of the tube is very small, because the factors affecting the welding process, namely pressure, temperature, contact and speed, are so correlated that they weld the edges of the steel only and the heat does not penetrate into the body of the metal.

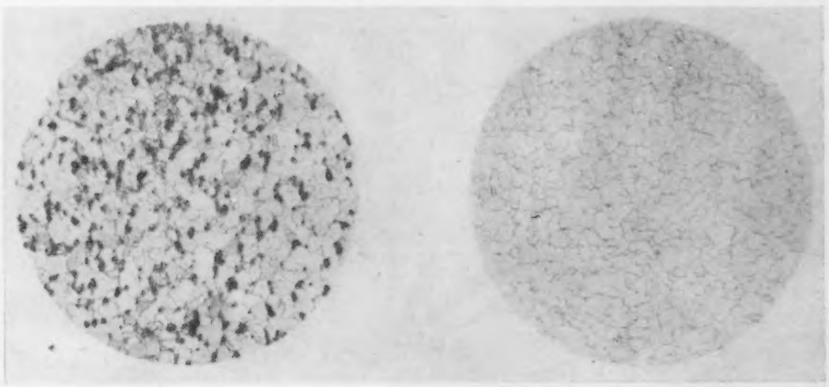
With the welding heat confined to the edges of the strip, the surface is not affected by the welding operation. A slight burr or upset is formed at the weld and this is removed inside and outside the tube by cutting tools. A smooth surface at the weld, one on which it is virtually impossible to locate the weld, is produced on the outside of the tube by a cutting tool located directly after the welding unit, which shaves off the outside burr.

When the tubes were first made the inside burr was rolled or forged down while hot by rolls inside the tube about a foot from the welding unit. These rolls were held in place in a mandrel by a shaft fastened at the entry end of the welder where the tube is butted for welding. While this method of removing the inside burr could be employed because the process is continuous, an improved method of removing the burr was developed a little later. With the present method a cutting tool is used and the upset is removed instead of being rolled into the tube.

The tube as it comes from the welder is subjected to all conventional expansion, flanging and flattening tests prior to the finishing operations, after which it is again tested. It is also subjected to the tests called for in boiler tube specifications.

Periodic samples are roller expanded with a standard roller expander, after which the tube is flanged. Test specimens are taken while the tube is being welded and tests are made immediately. If there is evidence of any failure at the weld, the tube is rejected and no further tubing is produced until an adjustment has been made and good weld obtained.

To obtain uniformity of microstructure and hardness, it has been the practice to normalize the



PHOTOMICROGRAPH of a cross section of the weld on a piece of ELECTRUNITE electric welded steel tube showing on the left the before annealing grain structure, and on the right the after annealing or normalized structure.

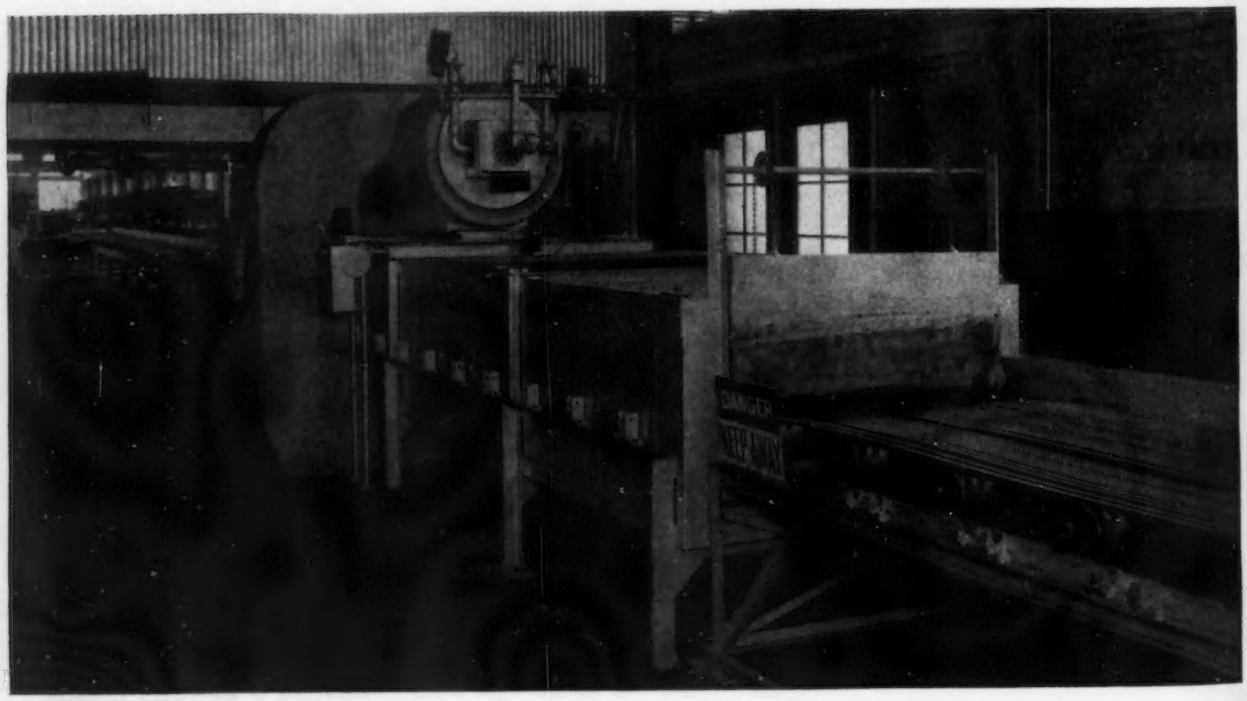
ENTRANCE end of the air controlled continuous normalizing furnace through which the tubes are carried on a live roller conveyor that extends on through the blueing furnace indistinctly shown in the far background. Tubes move through the normalizing furnace in one layer to assure their being heated uniformly. The hood above the furnace entrance is to carry away any unburned gas that may leak from the entrance.

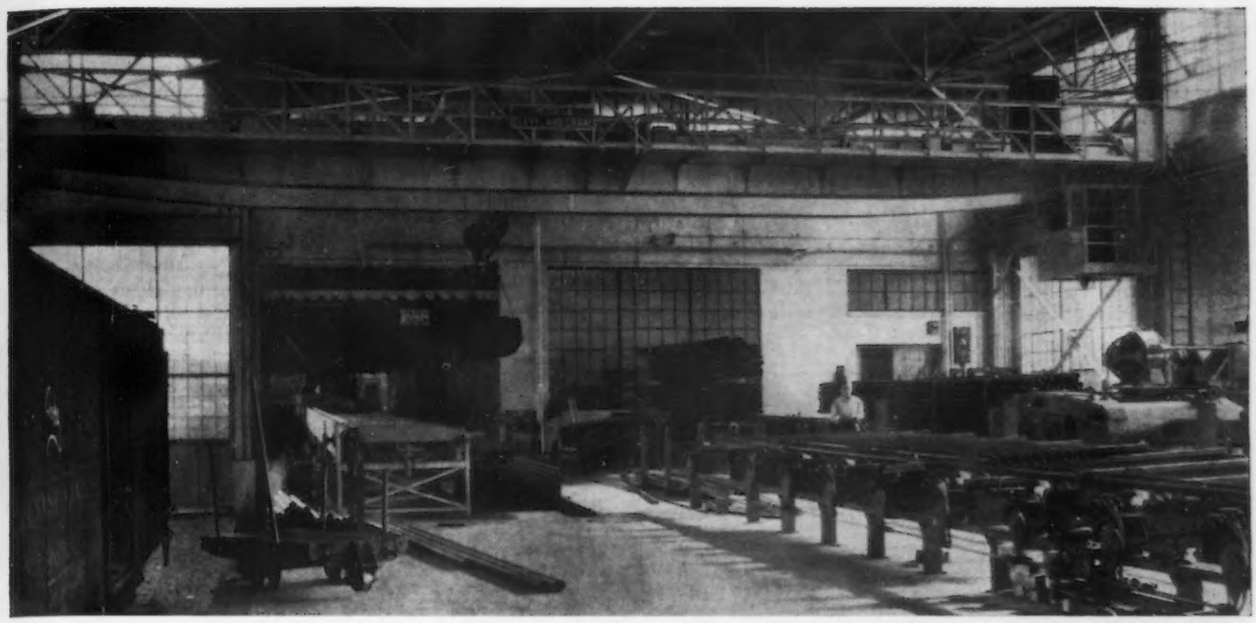
as-welded tube at a temperature above the critical points of the metal which in the case of boiler tube steel of 0.08 to 0.18 carbon is 1650 deg. F. Normalizing completely recrystallizes the steel, relieving all welding and cold working stresses and producing a fine grain microstructure of uniform hardness. This heat treatment restores uniformity to such an extent that it is virtually impossible to locate the point of weld under the microscope. This is shown in accompanying illustrations, which show the structure in the as-welded condition and the same tube after normalizing.

However, by normalizing in an ordinary continuous electric furnace a loose scale was formed which changed the bright-scale-free surface of the original cold worked as welded tube. This necessitated pickling to remove this scale and to produce a uniform scale-free surface. The tube after pickling did not have quite the same fine dense cold rolled surface as it had before being normalized and pickled, although it possessed all the essential features of uniformity in gage, in diameter, microstructure and hardness and surface condition.

To preserve the fine finish and

TUBES, unless a bright anneal is desired, continue on the conveyor from the normalizing furnace to a blueing furnace shown in this picture, in which they are given a thin blue oxide coating as a rust preventive.





LEAVING the blueing furnace the tubes move along on the conveyor into the processing room, the discharge end of the conveyor being shown at the left center. From the conveyor they are automatically dumped into racks and a crane delivers them in bundles to the straightening rolls shown at the right.

surface which results from the cold working of the hot-rolled strip as well as to do away with pickling the tubes after normalizing, the controlled atmosphere continuous electric furnace was installed. This unit consists of the furnace proper 36 ft. long and a cooling chamber approximately 78 ft. long, the atmosphere in the latter also being controlled. The furnace is of roller hearth type, its width being 4 ft. 4 in. across the rollers.

The cooling chamber is water jacketed at the top, side walls and bottom, so that the cooling rate may be controlled. Tubes which average around 24 ft. in length are carried through the furnace and cooling chamber on live rollers at the rate of 5000 lb. per hr.

A reducing gas made by partially burning illuminating gas is passed through a refrigerating unit to remove all moisture and is fed into the furnace to prevent oxidation at a rate which always keeps the furnace and cooling chamber slightly above atmospheric pressure so that all the leakage is outward. This leakage is burned at both the entrance and

o o o

GENERAL view of the new boiler tube processing building in which the tubes are straightened and cut to length, hydrostatically tested, inspected and stenciled and then are either loaded on cars or placed in storage.

o o o

exit doors of the furnace. Hoods with exhaust fans are placed directly above the doors to remove any traces of incompletely burned gases from the building.

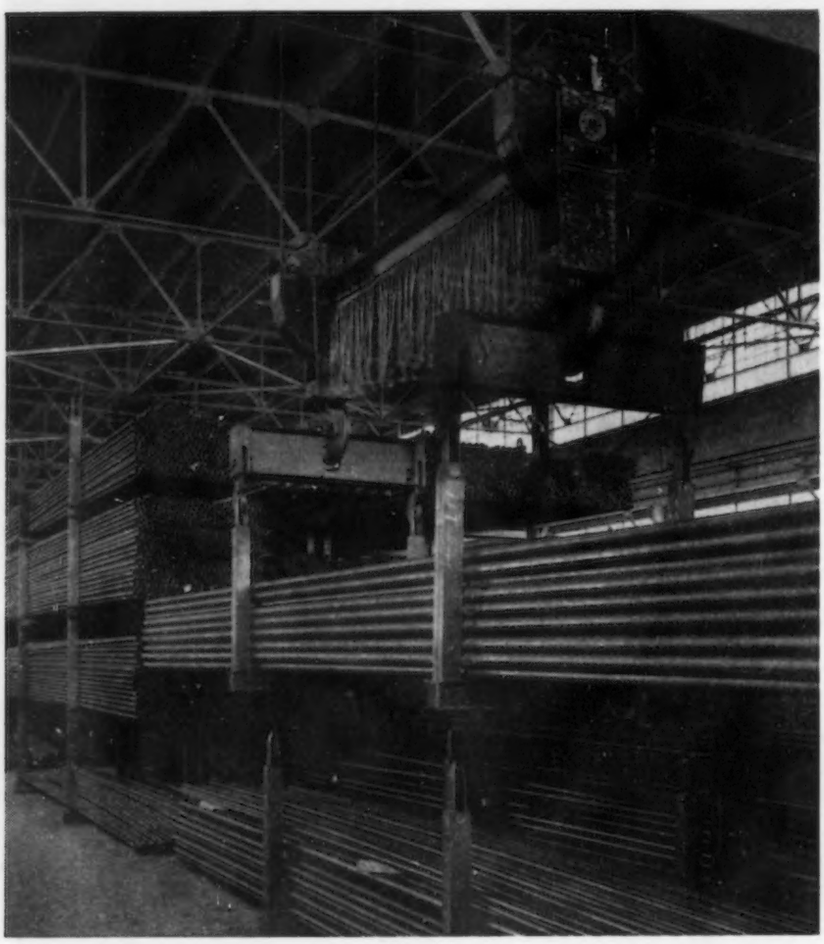
Automatic temperature controllers are used to maintain the desired temperature of 1650 deg. F. which has been found to yield a steel of fine grain size and which, though ductile and easy to roll, is tough and uniform in its physical properties. The cooling chamber is of sufficient length so that with the desired rate of cooling the tubes leave at a temperature below that at which scale will form. The result is a homogeneous tube of uniform grain structure and hardness with all of its original fine, dense and scale-free surface preserved.

Boiler tubes of standard boiler tube analysis steel from 1 to 5 in. outside diameter and heat exchanger tubing of various grades of steel from 3-16 in. to 5 in. outside diameter are normalized in the furnace.

The normalizing furnace is a 620-kw, 220-volt, 3-phase unit and was built by the General Electric Co.

The tubes after normalizing continue their movement on the roller conveyor, are inspected and removed if a bright annealed surface is required. Boiler and pressure tubes, however, continue on the conveyor and are carried to a blueing furnace in which a light blue oxide coating is imparted to the tubes similar to the blueing on a gun barrel. A temperature of 650 deg. F. is maintained in this furnace, which is gas fired.

Blueing of the tubes, it was thought, would provide some measure of protection against rust in shipment and storage. However, the oven has not been in use long enough to observe the efficiency of the coating throughout a yearly cycle of climatic changes, so that it is not possible at present to evaluate accurately the effectiveness of the blue oxide coating as a rust preventive.



THE storage section showing the conveyor rack for handling and storing tubes, the use of which results in much saving in floor space.

The tubes continue on the roller conveyor from the blueing oven into the recently completed boiler tube processing building. This is arranged as nearly as possible for straight line production with a minimum amount of handling between operations. Tubing is handled in bundles almost entirely by an overhead crane.

The processing operations start with straightening, the crane carrying the bundles of tubes directly across the building to straightening rolls. Although the tubes are fairly straight when discharged from the furnace, they are run through the roll straightener to assure a product that will meet strict requirements. Ends suitable for roller expansion and proper lengths of tubing are secured by trimming both ends of each tube in a lathe. They were originally cut to the approximate length directly on the welding machine with a punch cutting device that is synchronized with the welding speed, making it unnecessary to stop the welder each time a tube is cut.

Each tube is tested after straightening at a hydrostatic pressure of 2,000 lb. per sq. in., while two air hammers play upon it. The weld is kept on top and an inspector whose only duty is to inspect the tube during testing keeps close observation on the tube. The tester was specially designed and is practically automatic in operation.

A tube is rolled from the feeding skids into the tester and all further operations are automatic, the machine being operated through levers by one man. The ends are first closed, then the tube is clamped in position, filled with water, valves closed and the requisite pressure applied. At the completion of the test the reverse operation takes place and the tube is discharged.

The requisite number of flanging, flattening and crushing tests are made on each lot in accordance with the specifications of the A.S.M.E. boiler code or customer's specifications.

Each tube is then given a visual inspection for surface according to A.S.M.E. specifications. The requisite number of test pieces are taken to be certain that the run meets the physical tests specified in the various codes. After inspection is completed the tubes are stenciled and go directly to cars spotted on a track within the building or are carried by the crane farther back in the building for storage.

The storage racks are of particular interest as they provide not only facilities for storing but also

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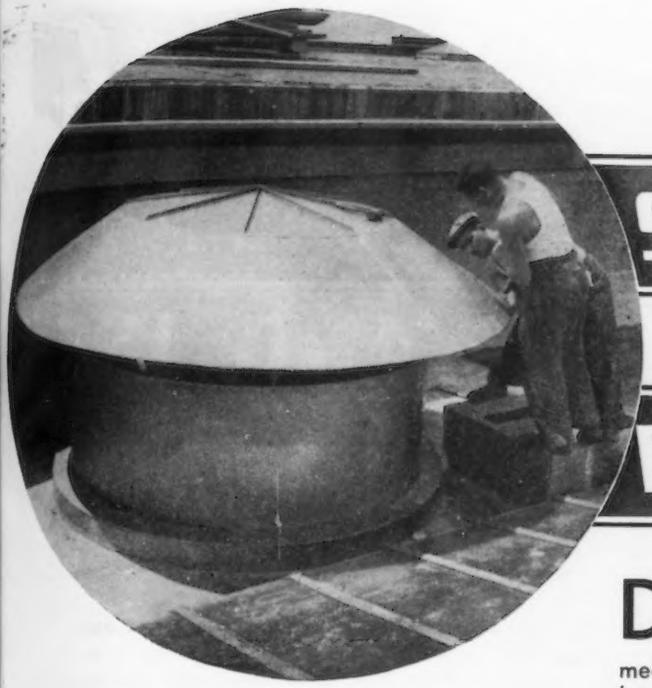
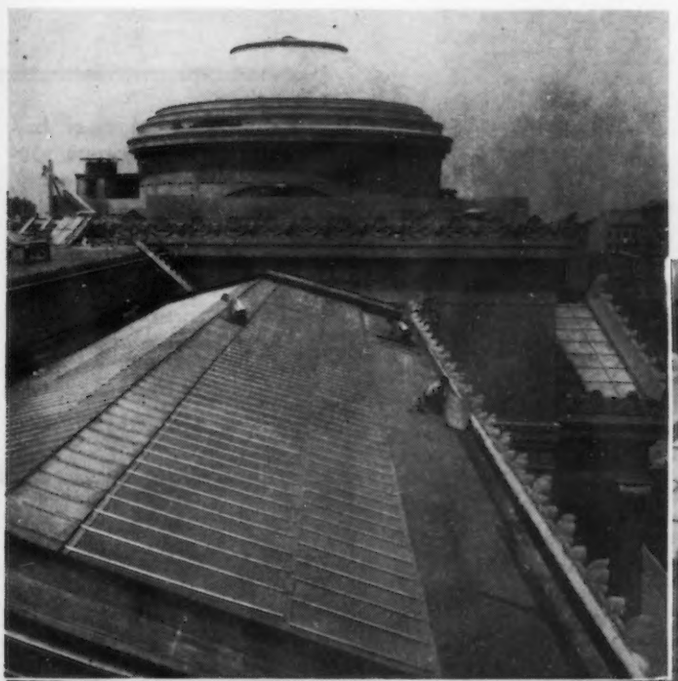


MECHANICS erecting a Monel ventilator exhaust on the roof of the Brooklyn Museum of Art.

SOLVING A NEW YORK ROOFING PROBLEM-

DAMP salt air plus the by-products of combustion combine to make New York atmosphere a severe taskmaster of metal roofs. One of the interesting developments in meeting this situation is the employment of Monel metal. It has been used with satisfactory results in this district on the New York public library, the Pennsylvania terminal and other buildings. Most recent adaptation of Monel to roofs is that shown in these pictures as applied to the Brooklyn Museum of Art.

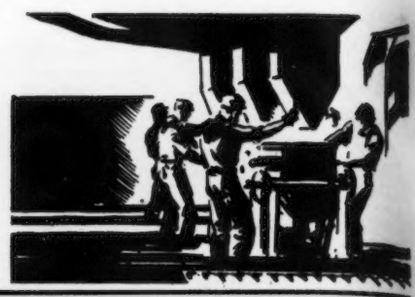


AT LEFT

GENERAL view of skylights and roofing on the Brooklyn Museum of Art. Monel plays a large part in this construction, even the nails being of that material.

BELOW

MONEL cap flashing being applied on the new museum roof.



....SAND TESTING AND ITS

o o o

By H. W. DIETERT
Chief Engineer, United States Radiator Co.

o o o

MOLDING sand in the foundry is most essential. However, sand is one of the greatest handicaps in the foundry when the melter fails to exercise most careful control over its many variable properties.

Sand testing equipment is now available which will enable foundrymen to control molding sand within a certain range required for the production of high-quality castings.

The purpose of sand control is to obtain and maintain a desirable moisture content, permeability, green and dry strength, expansion, deformation, sintering and fineness.

After a suitable workable sand is obtained, the maintenance of a uniform sand will do more to set up a productive routine than any other procedure available to the trade. Forcing molders to work with sand that varies from day to day makes it impossible for the molder or the foundry personnel to set up a standard routine practice which is so essential to modern production of quality goods.

A system for testing molding sand in a foundry is required to determine the exact condition of the sand. Sand testing may be incorporated in the foundry routine with very little effort, and the outline which follows is the usual procedure:

(1) Number each sand floor or sand system.

(2) Collect representative quart sand samples from the front, center and rear of each sand floor or from each sand system every hour.

(3) Test sample for moisture.

(4) Test sample for permeability.

(5) Test sample for green strength.

(6) Test mold for mold hardness.

(7) Test sample for dry strength once each week.

(8) Test sample for clay content and fineness once each month.

Test Data Application

Figures obtained from testing sand are of value only when the data are compared with castings produced. An outline of a method of applying sand test figures is given below:

(1) Record test figures.

(2) Compare test data with the castings produced.

(3) Compare test data with the castings produced and with the floor or system producing the best castings.

(4) Set up sand test figures that produce best results.

(5) Condition the sand as close to these test figures as possible in order to reduce fluctuation in sand characteristics.

(6) Maintain a standardized moisture.

(7) Maintain a standardized permeability.

(8) Maintain a standardized strength.

(9) Maintain a standardized mold hardness.

(10) Maintain a standardized fineness.

It has been repeatedly demonstrated that controlled molding sand will reduce scrap loss and improve casting quality. Production is increased by uniformity and good working sand. Supervisors are relieved of the constant worry to seek remedies. All of these cost savings can not fail to reflect in the financial condition of a foundry.

FOUNDRYMEN must balance refractoriness, porosity, grain size, strength, temper and binder of sand to a nicety if they expect best casting results. Patently there are many variables, and it is not surprising that quite a few melters neglect some factors and apply uncertain rule-of-thumb methods to their sand conditioning

Moisture Control

Molding sand may be obtained as a natural material or as a manufactured material. It always remains as the foundrymen's task to add water to the sand to make it suitable for use.

Upon the amount of water added depends whether the sand will be of practical value. Moisture control is the most important step in the preparation of sand for mold-

APPLICATION IN THE FOUNDRY

ing. A variation of 10 "points" will cause the sand to function as an entirely different material. Such moisture variation, besides causing casting defects, is in reality the same as furnishing an unfamiliar new sand to the molder.

Due to a molder's inability to feel exactly the moisture content of a sand, some form of testing equipment is necessary. Through the use of a Moisture Teller, a quick and accurate moisture test is possible.

methods. In this article, the author reviews the need of sand control, and points out the influence of each sand characteristic on the physical properties of a casting. This manuscript was presented late in February before the Birmingham section of the A.S.M.E. with the A.F.A. cooperating.

Sand moisture should be determined at the time of mixing. Determinations at the rate of one per minute may be made with the use of a Moisture Teller (made by Harry W. Dietert Co.).

A great variety of casting defects result from moisture variations. Defects termed "washes" are those caused by the sand being low in moisture. Low moisture results in low dry sand strength, and this causes the sand to lack firmness when molten metal flows over it.

Should the moisture be high, a large amount of steam is formed when the molten metal lays against the mold surface. The edges of the casting contour may be poorly defined and the surface will contain blow holes. When the moisture content is very high, large blow holes with jagged edges will result.

The finish of a casting is markedly influenced by the temper (moisture content) of the sand. A sand tempered to the dry side will cause the surface of the casting to contain areas of irregularly shaped depressions. Sand tempered with insufficient water will be eroded by molten metal due to its low dry sand strength.

A sand tempered with excess moisture causes many sand grains to stick to the pattern, which results in the appearance of void spaces on the mold surface into which molten metal will flow. A rough casting surface results. Sand that is correctly tempered will produce the smoothest casting surface finish.

Temper of molding sand may best be controlled by continually determining the moisture content of the sand as it is mixed. Test figures thus obtained should be used to govern the amount of water added.

Fineness—Permeability

Molding sand grain size defines the weight of casting that should be molded in the sand. In addition to the size of the various sand grains, the variety of the various grain sizes and the quantity of the various grain sizes, designated as distribution, are of great importance.

Grain fineness and distribution largely determine the permeability of a molding sand. Equipment used to quickly determine the permeability of sand consists of a rammer for preparing a standard specimen which is subsequently tested in a permeability meter.

The permeability of a sand is governed by the quantity and distribution of the fine or small sand grains, i.e., from 200 mesh to pan material. Grain size and distribution are determined by sifting sand through a series of sieves as shown in Fig. 1.

First thought may suggest the use of sand possessing a high permeability to be well on the safe side. This is a good practice, though it may be the source of casting defects termed "pin holes."

A combination of high permeability and high moisture may produce a casting whose surface contains a large number of pin holes. Each pin hole is a small void space caused by steam pocketed in the molten metal arising from the fact that the moisture in the sand flashed to steam. The rate at which steam is generated in the mold increases as the permeability increases. A reduction of permeability or moisture may eliminate pin holes of steam origin.

The other extreme would be to use a sand possessing a permeability too low for the weight of metal. Casting defects caused by low permeability are termed

"blows." A large pocket of steam may hold molten metal away from the mold surface. To remedy this, the permeability should be increased.

Occasionally the permeability of a sand is slightly on the low side with the result that when the mold is rammed a little too hard on the cope side, where ferrostatic pressure is the least, sufficient steam pressure is formed to cause the molten metal to be agitated. This agitation of the molten metal erodes the mold surface, causing casting defects termed "seams." The remedy is to reduce mold hardness or to increase permeability.

The finish of a casting depends largely on the fineness and distribution of the sand. A sand of high permeability will give a rough pebble casting surface up to the point where the molten metal will penetrate into the sand. A reduction in grain size will usually increase the smoothness of a casting, particularly so when certain grain sizes are removed that are much coarser than the average grain size.

A reduction in the variety of grain size increases the permeability. A sand can, therefore, be much finer for a given permeability when distribution is small, thus giving best finish for the chosen permeability.

The fineness or permeability of a sand can be controlled best by using a new material which possesses a fineness and distribution as desired in the shop molding sand. This reduces the constant struggle to maintain the permeability of the sand at its chosen value.

The reduction of fineness by air suction shakeout provides an excellent shop control of the fineness.

Strength Control

The strength of a molding sand must be considered first as the strength in the green tempered state, and, second, as the strength in the dried state.

The green strength of a molding sand is the ability of the sand to hold together when the mold is lifted from the pattern and when the mold is closed and transported. It also adds to the sand's ability to hold its molded contour as the ferrostatic pressure of the molten metal tends to distort the mold surface.

The dry strength of a molding sand must be present as soon as the moisture in the sand is evaporated either by a mold oven or by the heat of molten metal. Should the molding sand fail to possess insufficient dry strength, the sand would be easily washed by the molten metal.

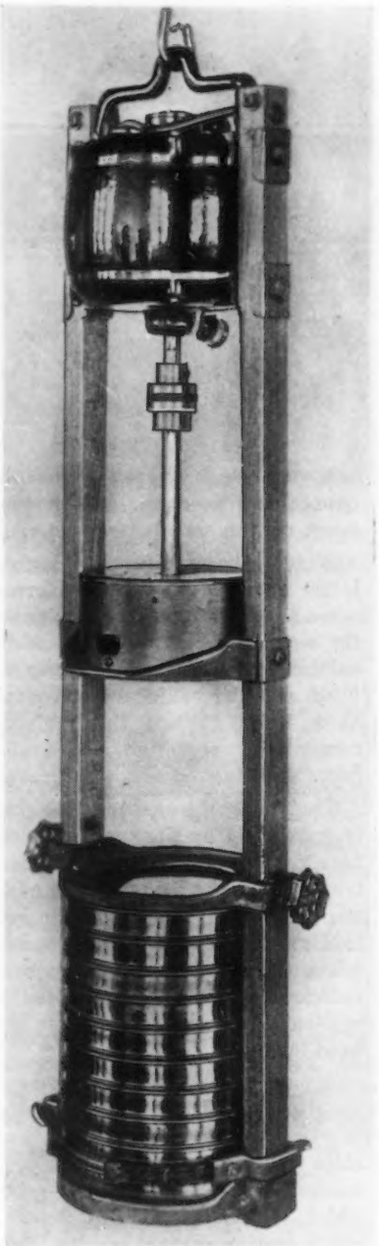


FIG. 1—Molding sand grain size and distribution can be determined by sifting the sand through a series of sieves similar to the ones shown here.

The green strength of a molding sand is secured normally by clay substance, and the quantity and quality of the clay substance are the controlling factors in imparting green strength. It is, therefore, of practical value to determine the percentage of clay substance with a rapid sand washer, as illustrated in Fig. 2.

The actual green and dry strength, produced by the clay substance or by such cereal binders as may be added, can be determined by using a sand strength machine.

The casting defects most commonly caused by low green strength are drops and swells.

The casting defects which result from high green strength are, sand burns, rough finish and scabs. A high clay content will reduce the sintering point and flowability of the sand and will result in a rough casting surface finish.

A low dry strength, such as may be caused by an insufficient quantity of plastic clay substances, will be responsible for casting defects which are termed "dirt inclusions," or "cuts" and "washes." Most frequently, a low green strength is the cause of a low dry strength so that the dirt inclusions and wash defects are ascribed to a low green strength.

The green strength of a sand may be controlled by establishing a uniform daily addition of new sand or bonding material, such as clay or Bentonite, to the used molding sand. The quantity of new material added is adjusted when required in order to maintain an established green strength.

The dry strength of a sand may be controlled by selecting a new sand, clay or Bentonite which possesses the dry strength properly desired. The addition of cereal binders, sea coal and molasses sugar also furnish a means of controlling dry strength.

Expansion-Contraction Control

The expansion and contraction of molding sand are determined by subjecting a 1⅛ in. diameter sand specimen to various temperatures. The variation in the length of a sand specimen is measured and expressed as expansion or contraction per inch of sand specimen length. A mold made from sand with high expansion will show cracks on the surface, as illustrated by core at the left in Fig. 3. The core on the right in the same illustration is made with a sand of low expansion.

Molding sand, like any other material, expands when heated. The expansion of molding sand begins

at approximately 300 deg. F. and ends at approximately 1200 deg. F. As the temperature increases beyond 1200 deg. some sands may begin to contract while other types may remain at their expanded volume until a temperature as high as 1800 deg. is reached before beginning to contract. At a temperature of 1900 deg., molding sand begins to contract rapidly, due to the fact that a portion of the clay bond sinters rapidly at this temperature.

mass to become shorter. This change in length is termed the deformation of a sand.

Deformation is measured in thousandths of an inch decrease of length per one inch of length.

The deformation of a new strong-bonded molding sand may be as high as 0.080 in. and for a weak sand with low moisture it may be as low as 0.010 in.

Molding sand with a high deformation per unit load will tend to produce swells. It will also contribute to drops, due to the fact that flask twist will tend to crack and weaken the sand.

Crushes may also be caused to increase in number when the deformation is low. This is due to the fact that the sand is not capable of deforming sufficiently to take up the crush of the mold.

Considerable research is required to thoroughly understand the method of controlling deformation.

Sintering Point Control

The sintering test offers the best method available for testing the ability of molding sand to withstand sand burn. A high sintering point will do much to improve the finish of castings.

The sintering point of a sand may be increased as follows:

(1) Increasing the grain size.
(2) Increasing the mold hardness.
(3) Reducing the clay content.
(4) Reducing the fluxes.

FIG. 3—Molding sand specimens after being heated to 2500 deg. F. The specimen on the left has high expansion characteristics and the one on the right has low expansion characteristics.

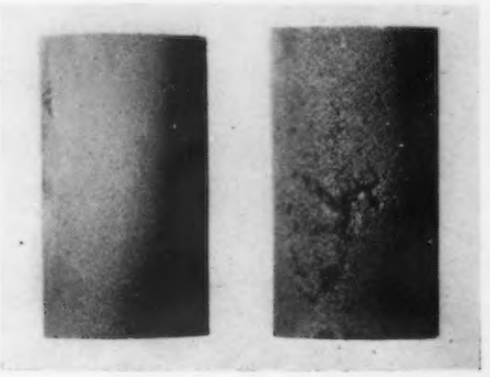


FIG. 4—The specimen on the left is of high flowability (90) and on the right is a specimen of low flowability (56). Low flowability encourages the formation of voids.

The expansion and contraction of molding sand are influenced to a large extent by the physical properties and by the mold hardness.

Many casting defects are caused by excessive expansion or excessive contraction. A rat tail defect on a light casting is caused by a high expansion of 0.020 in. Where the section of a casting is heavy, sufficient heat is present to cause the sand to first expand and then contract and cause a scab.

The control of expansion and contraction materially resolves to the reduction of expansion and contraction inasmuch as low expansion and contraction are desirable.

The available methods to reduce expansion and contraction are as follow:

(1) Reduce moisture.
(2) Increase grain size.
(3) Reduce ramming.
(4) Reduce clay.
(5) Increase combustible material.

Deformation Control

Whenever a load is applied to molding sand, the shape of the mass of sand is changed. A compression load will cause the sand

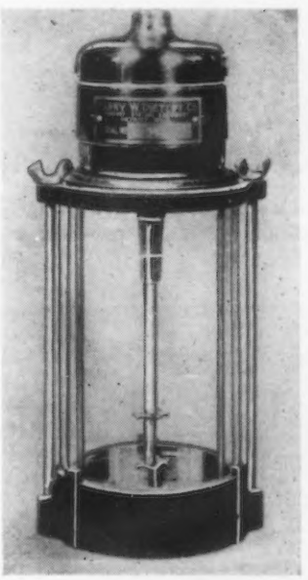


FIG. 2—Clay substance controls green sand strength. The percentage of clay substance is determined with this type of rapid sand washer.

Flowability Control

The flowability of a molding sand may visually be determined approximately or it may be determined exactly by a flowability indicator attached to a sand reamer. A sand with low flowability will show a large number of open void spaces, while a sand with high flowability will present an apparently voidless mold contour, as shown in Fig. 4.

A high flowability is one of the essentials in the production of smooth casting surfaces. High flowability may be obtained by the following procedure:

(1) Decrease green strength.
(2) Decrease grain size.
(3) Increase sea coal.
(4) Temper the sand on either dry or heavy side.

PUTTING AUTOMOTIVE METHODS

BECAUSE of its earlier experience in the automotive field, it was natural for the Briggs Manufacturing Co. of Detroit, to apply "conveyor line methods" to its new pressed steel bath tubs and kitchen sinks. These pictures show some of the steps used in turning sheet steel into modern, light weight tubs and sinks.

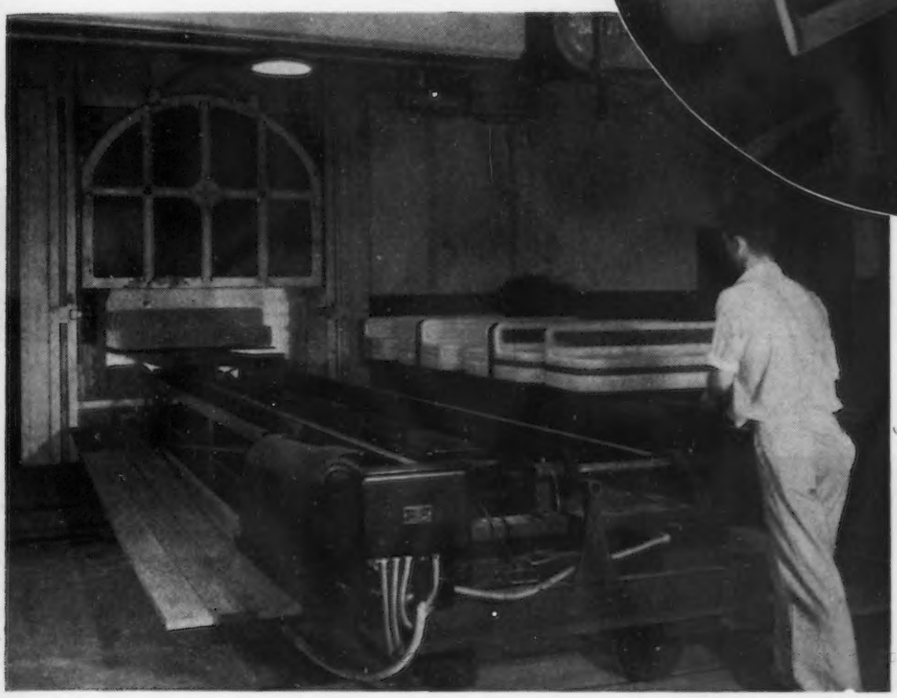
THE acid resisting enamel mixture is sprayed on to the prepared stampings by means of a spray gun operated by compressed air and utilizing an overhead conveyor system.

FURTHER preparation—pickling—follows in a sequence of seven dips. First an alkali solution, next two water rinses, then sulphuric acid immersion followed by water wash and neutralizers.

INTO BATH TUBS

AT RIGHT

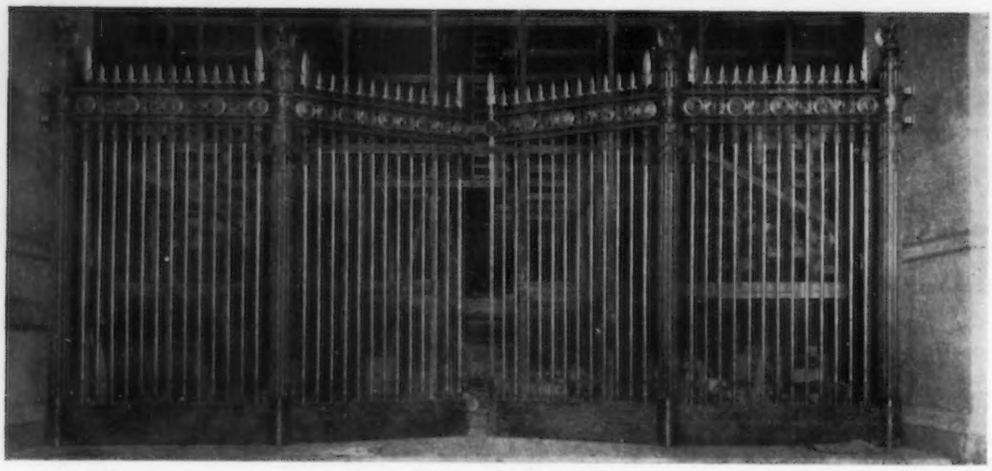
AFTER the tub is drawn from the sheet, utilizing some of the largest existing presses, the surface must be roughened so that the enamel will adhere permanently. This is done in modern, overhead lighted booths with adequate ventilating systems.



AT LEFT

MODERNIZATION is the keynote all through the process as will be noted in this picture which shows a gas fired oven and its electrically operated loading machine.

TWO coats of enamel are applied in addition to the ground coat. Each one is "burned on" in gas fired ovens at 1500 deg. Here we see a procession of tubs going to the ovens.



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THE 15-ft. high bronze gates that stand at the entrance of the exhibit hall.

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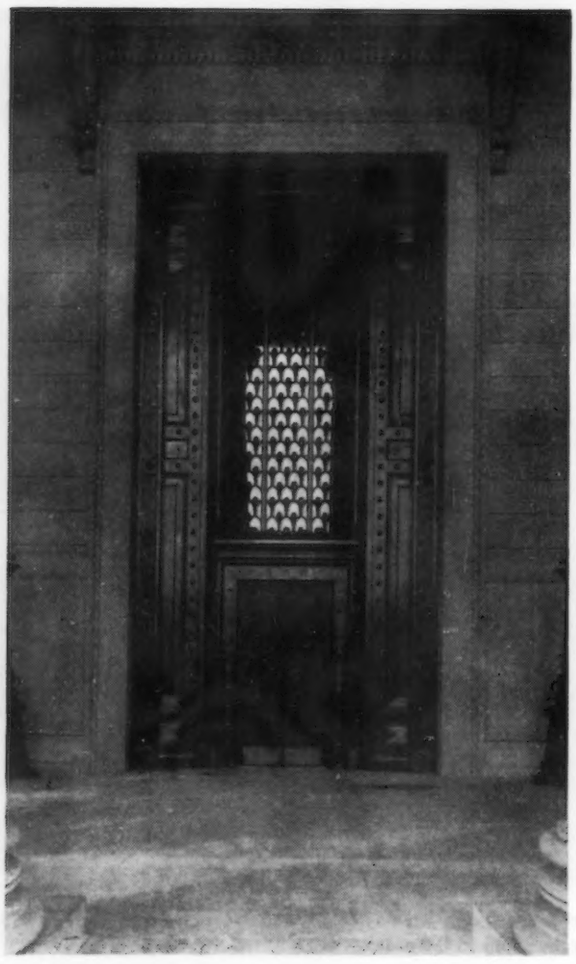
ARTISTIC BRONZE WORK ON



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THE doors opened and the grill work above the entrance.

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THE ornamental bronze work in the new archives building in Washington is an outstanding example of artistic handiwork in metals and has an elegance of appearance that harmonizes with the beautiful structure that in design and construction is one of the distinguished architectural achievements in the Capital City. The bronze work is also conspicuous because of the size and attractive appearance of doors and gates that have been installed in the building and the amount of money involved in the construction of these highly decorative embellishments.

All the bronze work in the building was fabricated and installed by the John Harsch Bronze & Foundry Co., Cleveland. The extent of the use of bronze in the finishing of the building is indicated by the contract price for the bronze work, which was $250,000. This included, in addition to the doors and gates referred to particularly in this article, small doors and gates, grills, stairway railings and other decorative work in bronze.

The main entrance to the building is guarded by two massive

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AN exterior view of the Archives Building.

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NEW ARCHIVES BUILDING...

doors which are said to be the largest bronze doors ever built. They are 38 ft. high, 1 ft. thick and each is 9 ft. wide. Each weighs 10,000 lb., of which 5500 lb. is bronze and 4500 lb. is steel. The frame or core of the door is constructed of standard structural steel sections welded and riveted together. Extreme accuracy was required in fabricating the cores, which carry the entire load and rigidity was also essential in order that the doors would always hang plumb.

The doors are built of ¼ in. bronze plate, extruded bronze sections and bronze castings, the latter being used for numerous rosettes that give decorative effect and for trim. The face is made of two plate sections 19 ft. long and welded together, the seam being ground and polished so that the joint cannot be seen. In fact, there are no visible joints or screws in the face or edges. The bronze plate is fastened to the core with invisible screws and the rosettes are attached to the plate by screws cast on the back of the rosettes.

The doors slide forward and backward in and out of pockets in the building wall on either side, on an overhead track and through

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THE massive doors 38 ft. high, weighing 10,000 lb. each, and motor operated that are placed at the entrance to the building.

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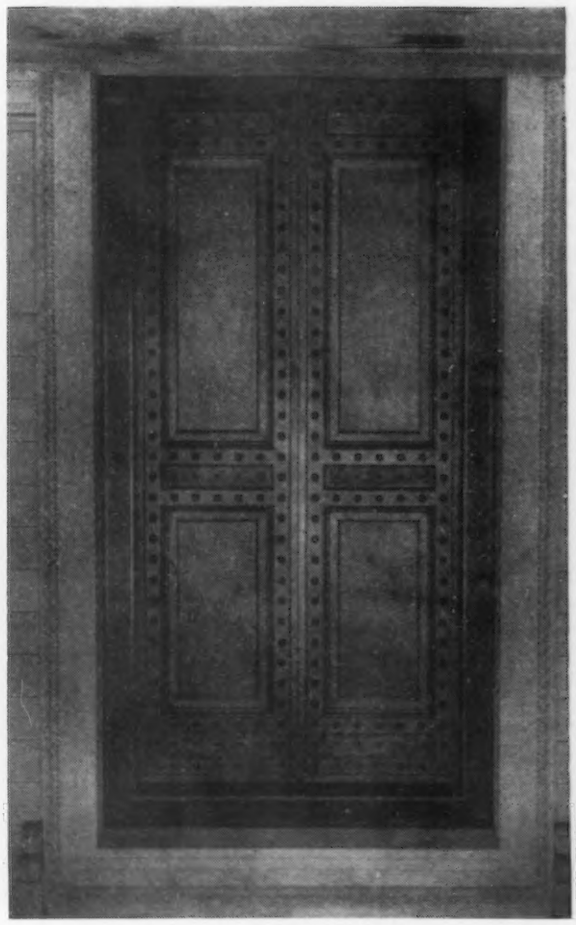


a groove in the sill at the bottom. Each door is operated by a 5-hp motor with push button control.

Crating the doors for shipment to prevent their weaving while being moved on the train presented quite a problem. For this purpose a heavy strong steel crate requiring 5 tons of steel was built and to prevent sliding in the car the crate was fastened to the floor.

Massive highly decorative bronze gates stand at the entrance of the exhibit hall in which the Constitution of the United States and other priceless documents will be preserved. These gates extend across an entrance opening 32 ft. 8 in. wide between two walls of the building.

An harmonious color effect is provided by the use of three nonferrous materials in the fabrication of the gates. The gates are 15 ft. high and have four posts as the supporting member. Two gates swing from the two interior posts, the two outer sections of the gate assembly being stationary.

The posts are of extruded bronze 10 in. in diameter and the spindles used in constructing the gates are white bronze rods 2⅛ in. and 1⅝ in. in diameter. The bottom rail is cast bronze, this being hollow to permit the insertion of the lower ends of the spindles. Medallions that decorate the tops of the gates are white bronze inlaid with yellow brass. The spindles are capped with white bronzed spears. An American eagle cast from yellow brass is mounted at the top of each of the four posts. The construction of these gates required 6000 lb. of brass and bronze.

Each post is mounted over a 5½-in. diameter steel pipe that extends from the top of the post down 16 ft. 2 in. beneath the floor. Below the floor a reinforced concrete column is built around the pipe. These columns provide a rigid support for the posts. When the gates are opened and closed the adjoining posts to which they are attached move with the two movable gate sections, the section of the pipe that extends through the center of the posts serving as a shaft, on which the post rotates. To assure easy movement of the gates they are mounted on ball bearings.

The archives building was erected by the George A. Fuller Co., Washington. John Russell Pope, New York, was the architect.

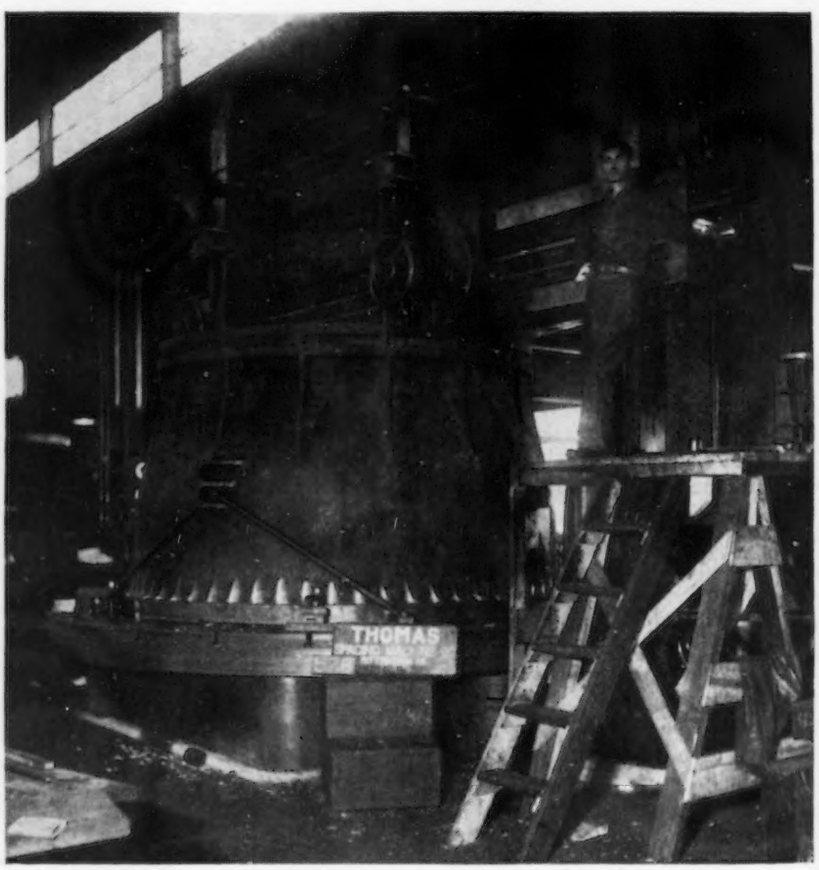
MORE STEEL FOR BOUL-

BOULDER DAM, with its vast system of heavy machinery, has been an immense consumer of steel. Recently purchased units for the dam are 12 72-in. 60-ton needle valves now being made by Thomas Spacing Machine Co., Pittsburgh.

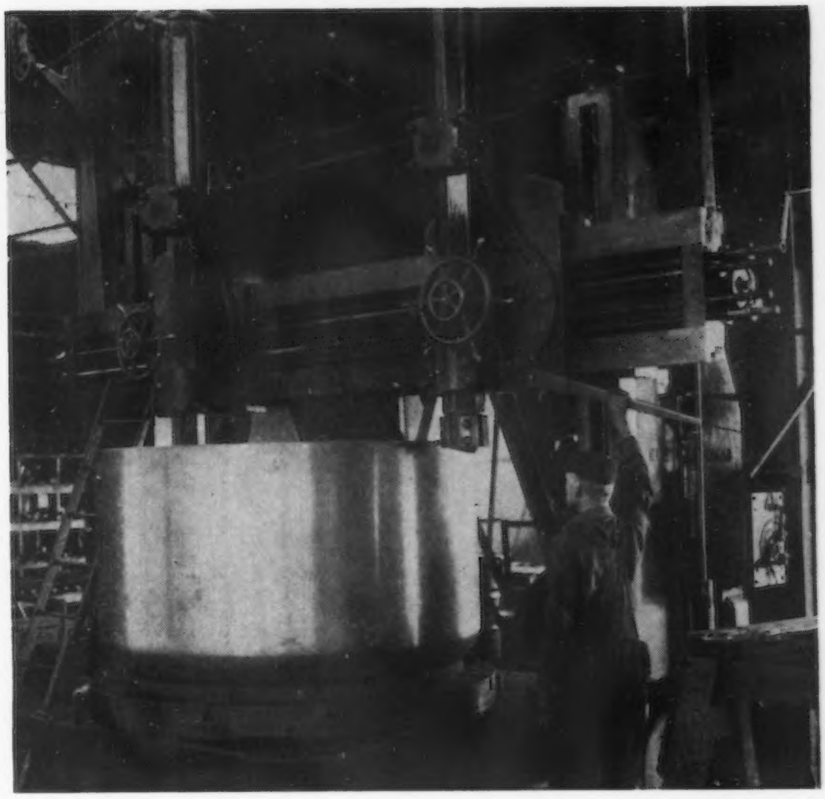
Some 570 tons of steel and 150 tons of bronze will be used in the 12 valves. The two main housings for each valve account for approximately 75,000 lb. of steel, and each bronze needle body weighs approximately 10,000 lb.

The 40,000 sq. ft. of floor space devoted to production of these valves is so arranged that three units are in progress of production at one time. Many operations are required in preparing the individual parts of each valve prior to assembly. The two steel housing sections and the bronze needle body are each put through three major tooling operations. In successive steps they are worked in the boring, milling, and drilling machines. These three large parts alone require the drilling of 362 holes

THE 38,000-lb. cast steel nozzle of one of the 60-ton needle valves in the process of being bored in preparation for placement of the valve liner, which guides the 20-ton moving mechanism when operated.



DER DAM



TURNING the 10,000-lb. bronze needle body for each 72-in. needle valve is a delicate operation. It is worked on a machine using a wide tool to eliminate tool marks, and final finish is imparted with emery cloth. This part of the valve is 42 in. long with an outside diameter of 77 in., and is machined to a thickness of 2⅝ in.

ranging in size to accommodate a ¾-in. bolt to a 2⅝-in. stud.

Special jigs were made to aid in all drilling operations. These jigs were used to insure that the holes in all mating parts would fit correctly. The largest is ring-shaped with an outside diameter of 138 in.; the others, 50 in all, varied in size and shape to suit the many parts to be drilled.

A total of 540 bolts and studs, many of which are specially heat treated, are used in joining the 125 parts which go into the assembly of each valve.

All valves are completely assembled on the shop floor, after which they are placed in operation and run through their full movement. In one test, the valves are operated under pressure of 400 lb. per sq. in. to insure that all parts will withstand the punishment of bi-passing 25,000 gal. of water per min. at a velocity of 80 miles per hr.

The valves will be installed in two batteries of six each in the 2-ton tunnel plug outlet works located, respectively, in the lower Arizona and lower Nevada penstock tunnels of Boulder Dam.

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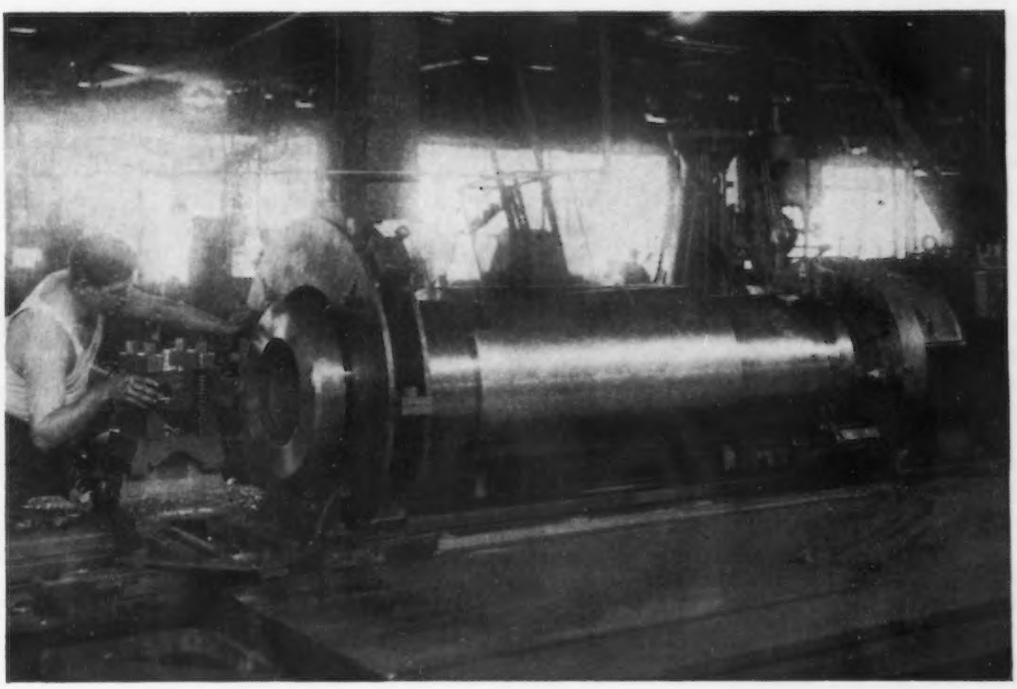

FACING the end of the 7000-lb. bronze diaphragm tube, one of the principal parts of each of the twelve 60-ton Boulder Dam needle valves. This is one of many machining operations required by the job. The tube is 90 in. long and has an outside diameter of 24½ in. when finished.

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MACHINE shop and stock room, with welding machine deck and bus bar casing in the background. This central bay is high enough to provide for an extra floor for dead storage space if needed.

A BUILDING TO

By FRANK J. OLIVER
Detroit Editor, The Iron Age

WHEN because of expanding business, executives of Mechanical Handling Systems, Inc., Detroit, decided to more than double its floor space for manufacturing, they incorporated a number of ideas in keeping with good layout. At the same time a unit system was devised to take care of future expansion along logical lines.

In the present development, the original building was lengthened 50 ft. and two bays were added, one a stock and machine shop bay 40 ft. wide, the other a work or assembly bay 60 ft. wide. The plan is to make future extensions on the basis of 40- and 60-ft. alternate bays. The 40-ft. bay is high enough so that an additional floor for dead storage can be added if such space is needed.

The company's principal products are equally divided between industrial conveyors and "haul-away" trailer units for transporting automobiles over the highways. Both products are fabricated from structural shapes and a variety of special shapes formed from plate in the press brake. Both riveted and welded construction are employed.

An L-form of material flow has been adopted; that is, material—mainly structural shapes, plates and sheets—comes in from the west side yard, heads east through shear, friction saw, press brake and punch and is sent south down either of two work bays at right angles.

The building is of steel and steel sash construction, with only a low wall of brick running to window height. Roof is of wood, tar paper covered. There are no columns between bays and an Austin roof truss, electrically welded, spans the 60-ft. bay. Incidentally, the original building is of the same design and was the first welded industrial building to be erected in Detroit.

A 5-ton underhung crane of 40-ft. span is suspended directly from the roof trusses. The bridge on the crane is of simple I-beam construction so that the crane trolley can be run directly off on to a monorail traversing the ends of the bays in line with the material flow east. Such an arrangement is feasible since none of the haul-away trailer units taxes the crane capacity.

Because the assembled product often runs up to 50 ft. overall length and must obviously be driven away, large doors 14 ft. wide by 16 ft. high are provided at the end of each bay. Illumination is ample, in fact brilliant, by the glass encased walls, but high-intensity mercury vapor lamps alternating with filament lamps provide the necessary foot candles in late afternoon and at night.

Since a great deal of electric welding is performed in the fabrication of the product, the provision for adequate welding facilities was paramount. The company has 35 generator sets, 20 of which are set up on two mezzanine cat

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PORTABLE welding generator sets are mounted on an upper deck out of the way of stock piles and finished work. Connecting switch boxes are mounted directly on the bus bar distribution casing and control of each set is from a central panel board.

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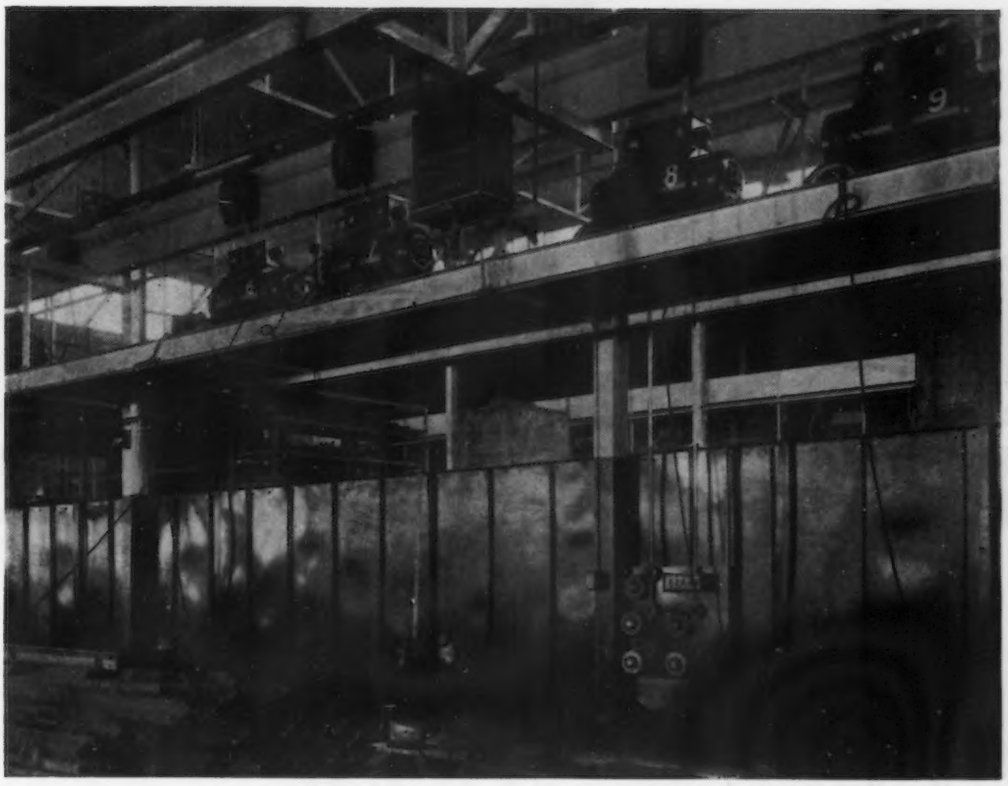

SUIT THE JOB..

walks suspended from the roof trusses along the line of bay columns. Ultimate capacity is 15 welders per deck.

This arrangement accomplishes three purposes: it gets the welding machines up out of the way where they are not subject to abuse of having stock piled or dropped on them; it keeps them cleaner, and it simplifies the power connections. Power is bought from the local utility and comes in at primary voltage of 4800 volts. Transformers outside the building cut this down to 220 volts and distribution is through a bank of oil switches on an upper deck.

Power for the welders passes through an 800-amp. switch to three copper bus bars ¼ x 2 in. These bars divide into two channels and are encased in an 18-gage steel trough painted with aluminum. Removable covers are placed at intervals, which permits knife switch boxes to be installed for flexible conduit connections to each welder unit. Control of the battery welders is by separate rheostats mounted on a central board on the wall. Welding current is supplied through standard rubber-covered cables at present, but ultimately the intention is to bring these connections to strategic points by conduit in the floors. Troughs are already prepared in the concrete to receive these conduits.

At the end of one of the welding machine decks, the bus bars enter a panel board from which the power is distributed to the various machines, by pipe conduit in the floor (as for the press brake, shear, etc.) and in the air in the small machine shop. Flexible B-X cable connects unit heaters to separate conduit distribution systems. Each heater is thermostatically-controlled from a point about head height from the floor. Shop temperature is maintained at 65 deg. in winter. Incidentally, in the expansion program a new boiler installation with automatic stoker was made in the heating plant, in which the motor-driven air compressors are also housed.

Another novel feature of this layout is the location of the superintendent's office in what amounts to a pulpit 12 ft. above the floor. With glass walls on all sides, he can view all parts of the shop by merely rising from his chair. At the same time the office is well lighted and is relatively free from noise, considering the usual din in a structural shop.

There is a blacksmith shop used principally for simple forging operations and for hot bending of I-beams, channels and angles. It is separated from the rest of the shop by corrugated steel partitions, and its outside walls are the same material. For hot bending operations there are two portable forge fires mounted on casters and capable of heating a 6-ft. section up to 6 in. in width. Coke is used as the fuel, and the blower is mounted integral with the unit which itself is built of structural shapes welded around the brick work. Such an arrangement adds flexibility to the operations when awkward shapes are encountered. Most of the bending is performed on tables with hand tools.

THIS WEEK ON THE ASSEMBLY LINE

. . . Auto production shows gain over previous week when hot weather curtailed schedules.

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. . . Small car market being watched by Big Three as Willys shows signs of strong comeback.

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. . . Shortage of skilled workers handicaps both machinery builders and tool and die shops.

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. . . Unionization drive making little progress, and industrialists' fear of trouble this fall seems unfounded.

DETROIT, July 28.

AUTOMOTIVE production took an upward turn last week, although in reality the rise rather reflected the fact that in the previous week production had been curtailed to a slight extent owing to excessively hot weather. Ward's Automotive Reports estimate total production for the week ending July 25 at 99,329 cars and trucks in the United States and Canada, compared with 97,768 the previous week. A year ago the corresponding week's production was approximately 81,490 units. Increased activity in General Motors and Chrysler groups accounted for most of the rise, Ford Motor Co. holding its own for the past three weeks.

This will probably be the final turning point from the hundred thousand unit mark. Although assemblies will continue at a fairly high level throughout August, seasonal shut-down and change-over periods will be reflected in the expected decline at this time of the year. Ford Motor Co. shuts down for inventory for its usual two weeks beginning Aug. 1, so that during that period total production will be reduced by approximately 24,000 units a week. It is understood that Chevrolet has scheduled approximately 100,000 assemblies for August, but shortly after the first of the month the motor plant will shut down for change-over. All the assembly plants will have been supplied with motors and other components, including stampings fabricated during July. Plymouth, which has a very small change-over program in sight, will continue its present output of approximately 12,000 units a week for an indefinite period, as long as present sales continue.

Furthermore, a large bank of motors is being built up since no motor changes are contemplated in 1937 models. Change-over work is already going on at a high rate in several of the independents in the industry and the staggering of announcements anticipated will not permit the total volume of production for the industry to reach a low comparable with last year's in September. In fact, this year we will have a situation where three or four manufacturers will announce ahead of show time and where others will find themselves only with dummies to exhibit at the show in place of running models. This is owing to the delivery situation in the machine tool plants, a situation that has been further aggravated by the extremely hot weather in recent weeks.

Total output of cars and trucks in the United States and Canada for June, as reported by the Department of Commerce, was 470,887 units, only 10,000 under the May figure. April represented the high point of the year, with 527,728 units. The corresponding figure for June, 1935, was 372,085. Preliminary reports indicate that new passenger car sales during the month of June reached a new high in the history of the industry. R. L. Polk & Co.'s figures for 29 reporting states show an increase of 42.5 per cent over the 1935 mark. If the same rate holds true for all states, the total volume of sales for the month should run to about 395,000 units. We will have to go back to June, 1929, to get a comparable figure for that month. There is even a possibility that the June sales figure may exceed the May total

of this year. Sales during the current month are obviously below the June level, but are at a higher rate than was earlier anticipated. The principal deterring factor in car sales at the present moment is the drought, with its subsequent curtailment of crop production in certain areas of the country.

Watching the Small Car Market

A situation that is being watched very closely is the small car market. Particularly are the Big Three watching each other carefully as to moves in this direction. Ford is in a position to jump into a low-priced car with small-sized engine on very short notice. Chevrolet has had such a job on paper for the last two years, and it is understood that Plymouth has an experimental car running around the streets of Detroit at the present time.

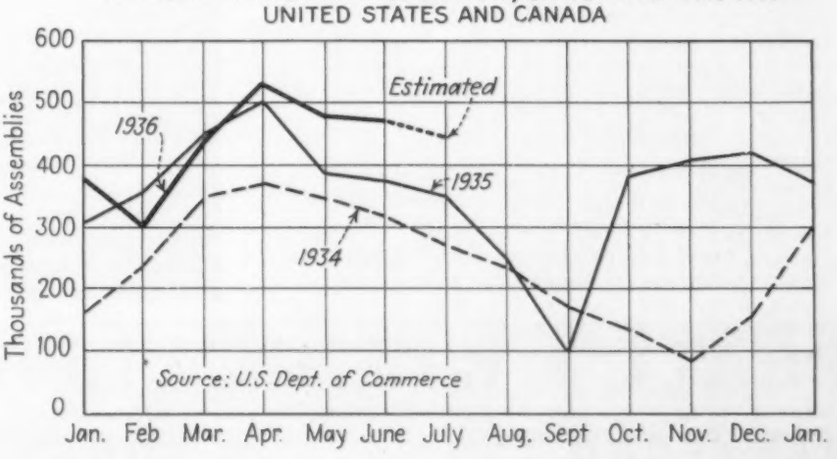
An outside factor has recently been injected into the situation in signs of increased virility on the part of Willys-Overland Co. in Toledo. Under Federal receivership, the company has shown marked progress in production and sales during the last six months and from information that has leaked out about the 1937 model, the company will be in a position to offer something quite attractive in the low-priced field, stressing true economy of operation with a 4-cylinder engine. By going to what amounts to a standard-size body with standard wheel tread and a styling that closely resembles the Cord job, Willys-Overland hopes to make a real comeback this fall. The only thing that will prevent the new Willys from being highly competitive to present volume producers is the company's present lack of dealer outlets.

If there is to be a small car race, Ford will certainly have a start on all the rest. A program of this kind would involve such radically new tooling over what is in present use that it would seem wellnigh impossible to assemble such equipment from scratch in less than ten months, since this is the actual delivery date being quoted on certain classes of special-purpose machine tools. Machine tool builders of course, are hampered by the lack of skilled men. In fact, Detroit tool and die shops have felt this shortage acutely for the past two months. There have been a few sporadic attempts to induce skilled workers to come in from other cities as far away as Milwaukee, but the pickings are found to be just as slim there as here. Attempts on the part of one large tool shop to recruit some men from Cincinnati resulted in a kick-back from the machine tool industry there at a moment when it is trying its darndest to meet its delivery promises on equipment going into the plants during the coming change-over period. In fact, machinery dealers in this area are looking forward to a delivery situation that will become increasingly tense as the weeks go on.

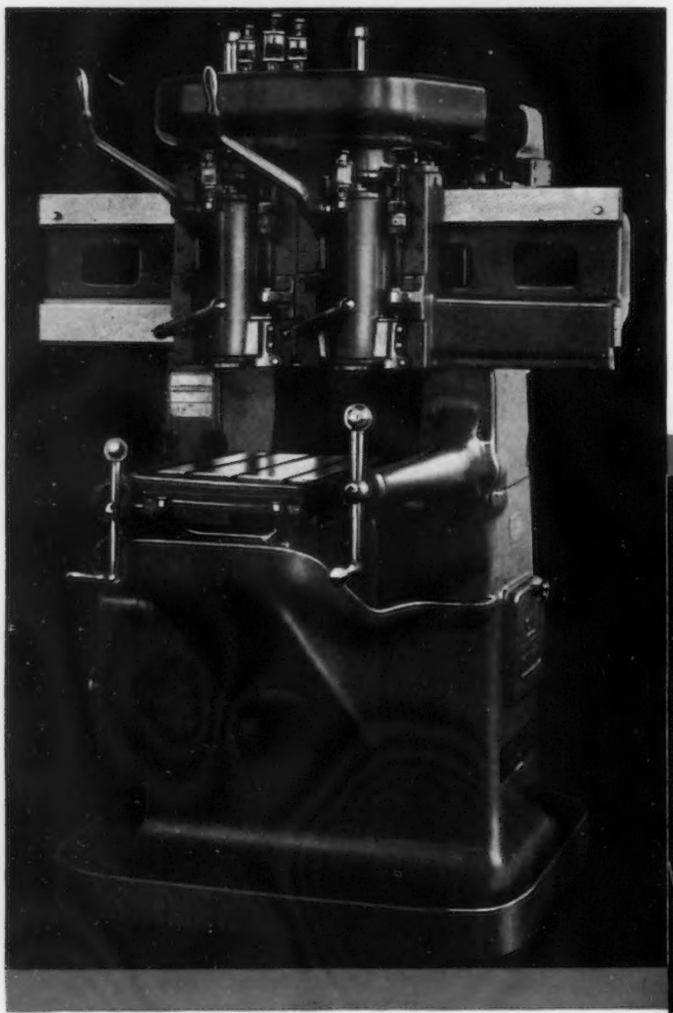
This shortage of skilled men can be traced directly back to the fact that training programs went out of the picture in the early part of the depression, together with even earlier restrictions on immigration. Detroit began to see the error of its ways over a year ago and last fall began an intensive drive to interest manufacturers in a city-wide apprenticeship program. As a result, there are now about 950 boys engaged in four-year apprenticeship programs in automotive and parts plants throughout this area. The product of this system, however, will not be available until four long years have elapsed. Jobbing die shops are not in this program, but many of them have absorbed a part of the output of the Ford Trade School, now in its twentieth year.

Murray Corp. is enlarging its frame plant at Ecorse just south

TOTAL AUTOMOBILE PRODUCTION, CARS AND TRUCKS
UNITED STATES AND CANADA

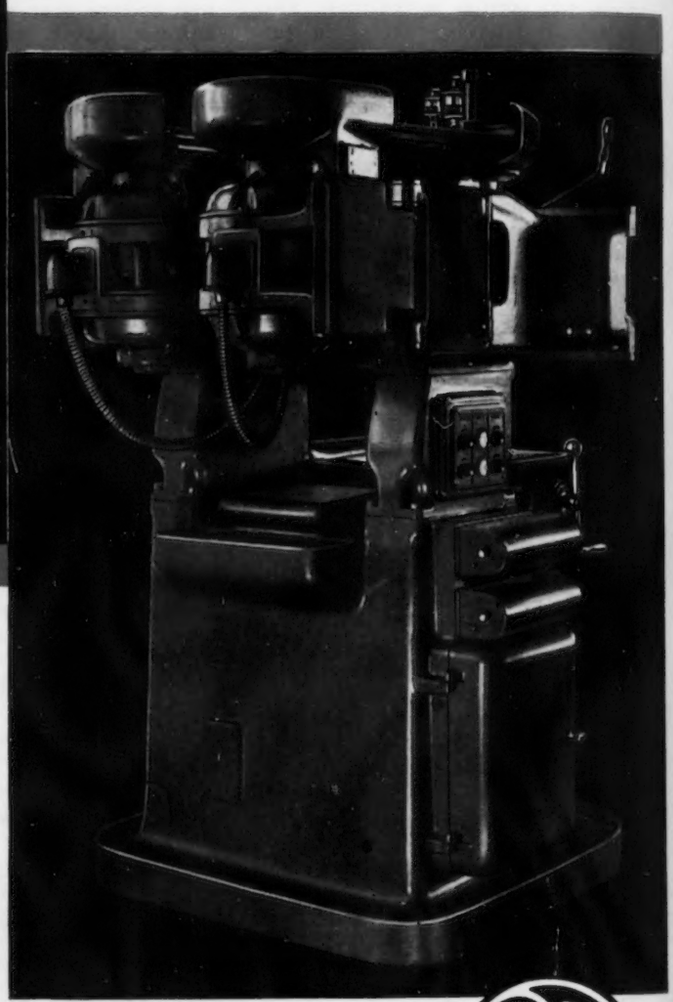


The 1936 MODEL
PRATT & WHITNEY No. 12B
Vertical Miller and Profiler



THE No. 12B High Speed Vertical Miller and Profiler succeeds the well-known P&W No. 12 Profiler used thruout the world for the economical production of small parts requiring accurate interchangeability. The new machine uses the same basic principle, but is equipped with high speed anti-friction bearing spindles, individually motor driven, for using modern high speed cutters efficiently. It is available with either one or two spindles, and can be supplied either as a general purpose machine or as a single purpose production machine. Spindle speeds range from 300 to 3600 R.P.M. Write for complete information.

A front view of the two-spindle machine. Each spindle is mounted in two preloaded super-precision ball bearings at the bottom, and a single floating ball bearing at the top.



A rear view. Each spindle has a one horse-power driving motor, mounted vertically on a ball bearing hinged bracket. A radius rod and turn-buckle for each motor maintain tension in the multiple V-belt drives.

PRATT & WHITNEY DIVISION
NILES-BEMENT-POND COMPANY
HARTFORD, ... CONN., U. S. A.

of Detroit and next door to the Great Lakes Steel plant, from which it receives its hot-rolled strip. This expansion is to take care of additional Chrysler frame business on 1937 models. Murray has been running both Dodge and Ford chassis frames through this plant and, besides getting increased Dodge business, is also to make a portion of Plymouth's frame requirements. It is understood that this new business has been gained largely at the expense of the A. O. Smith Corp. in Milwaukee.

Changes in the Ford frame for next season contemplate arc welding of the X-shaped inner frame to the outer channels for greater rigidity. The Chrysler frames will also have a large amount of arc welding on them. Murray is training press operators and rivet hands for this new work by giving selected men two hours of arc-welding practice daily on scrap metal. In this way they hope to have available a supply of skilled welders for fall production, since activities earlier this year in body plants have proved that all the available arc welders are employed.

Hudson is widening its frame for next year in keeping with the trend toward wider bodies and the practical elimination of running boards. In fact, its die program this year is much more extensive than last year's.

Machinery is being shipped into Chrysler's Jefferson Avenue plant in large quantities to take care of the new 6-cylinder motor line. DeSoto production is being shifted from this plant to the Wyoming Avenue plant bought a few years ago from General Motors, which at one time used this building for LaSalle production. An extensive addition is also being erected here as a press shop to relieve the Dodge main plant. Approximately $750,000 worth of presses have been purchased for this new plant, which will add considerably to the stamping capacity of the Chrysler Corp., although some of this equipment replaces existing obsolete machinery. Whether this additional capacity is intended merely to meet contemplated increased production next model season or whether it will mean that a lesser amount of stamping work will be placed on the outside is as yet problematical. No doubt, both factors are involved.

All is quiet on the labor front. The recently rejuvenated Automobile Workers' of America have held several open-air mass meetings, where the attendance has not been large. Relatively few workers have been signed up at these meetings. Union officials, however, do not consider this a fair gage of progress, since they are planning a slow and methodical "educational" campaign with the idea of building up some real enthusiasm for a trades union movement before they begin to sign up members and collect dues. For this reason it now appears that there will be no trial of strength in this area, even in the late fall.

L. A. Young Spring & Wire Co. recently reopened its Los Angeles plant after an eight week's shutdown owing to labor difficulties. The entire issue was recognition of the union and a closed shop contract, but the company announced that it would prefer to let the plant remain closed indefinitely rather than to submit to organized labor domination. The plant has been reopened without difficulty and without concession to the union.

Steel suppliers are finding the going rather slow as far as automotive orders are concerned, although more than one supplier is reporting a better-than-anticipated volume from general industry. While there is still some steel being delivered on 1936 specifications, orders on these items have practically ceased and it is yet a little too early for any large tonnages to come through on 1937 products. Both Packard and Studebaker have placed orders for initial runs, however, and Buick has made some substantial commitments during the past week. Fisher Body has also entered the market for die steels for its new Grand Rapids plant, the die shop of which is now getting into production.

A Toledo stamping company is getting ready to produce a front-seat adjusting device said to represent a real advance over present devices for adjusting the driver to the wheel and pedals. Over $300,000 has been spent on patent developments and it is expected that a ready market will be found among a number of motor car manufacturers. In a single mechanism a means is provided for raising, lowering, advancing or withdrawing the bottom of the seat and also inclining the back.

o o o

AT the Chrysler body plant, an air curtain surrounds the body and does away with the necessity for booths or partitions. The air, maintained at constant temperature throughout the year, is forced from the roof to the floor and withdrawn at the roof. The current is from the outside of the air curtain towards the body being painted, so all fumes and paint are carried away from the workmen.

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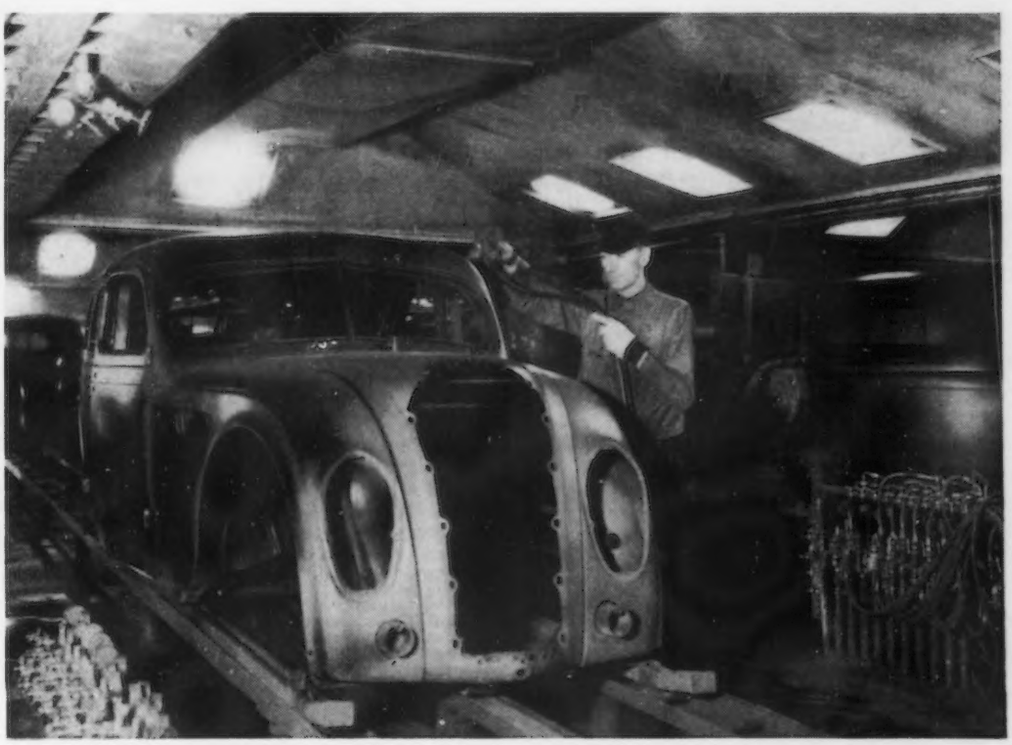


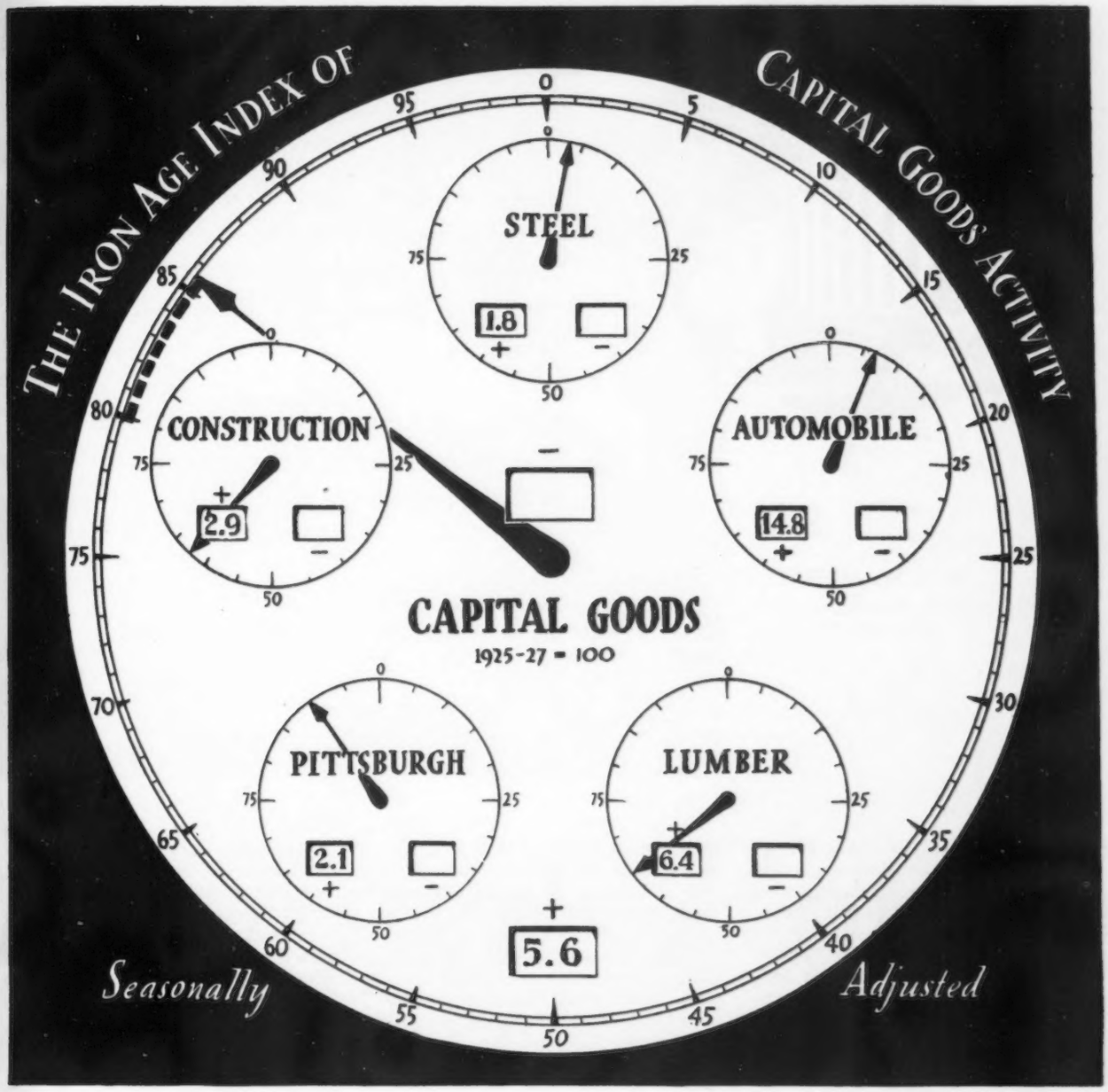
Current Metal Working Activity Statistically Shown

These Data Are Assembled by The Iron Age from Recognized Sources and Are Changed Regularly as More Recent Figures Are Made Available.

	June, 1936	May, 1936	June, 1935	Six Months, 1935	Six Months, 1936
Raw Materials:					
Lake ore consumption (gross tons)[a]	3,941,426	‡3,882,173	2,198,757	14,355,992	19,790,633
Coke production (net tons)[b]	.....	3,837,323	2,660,113	17,022,748	.....
Pig Iron:					
Pig iron output—monthly (gross tons)[c]	2,586,240	2,648,401	1,552,514	9,799,000	13,528,226
Pig iron output—daily (gross tons)[c]	86,208	85,432	51,750	54,138	74,331
Castings:					
Malleable castings—production (net tons)[d]	.....	45,027	27,548	231,897	....
Malleable castings—orders (net tons)[d]	.....	44,136	25,668	220,228	.....
Steel castings—production (net tons)[d]	.....	64,246	27,665	180,925	.....
Steel castings—orders (net tons)[d]	.....	63,950	30,257	182,370	.....
Steel Ingots:					
Steel ingot production—monthly (gross tons)[e]	3,984,845	4,046,253	2,258,664	16,042,651	21,326,335
Steel ingot production—daily (gross tons)[e]	153,263	155,625	90,347	103,501	136,707
Steel ingot production—per cent of capacity[e]	69.83	70.91	40.81	46.75	62.29
Finished Steel:					
Trackwork shipments (net tons)[e]	6,507	7,314	4,210	21,575	34,592
Steel rail orders (gross tons)[e]	13,200	8,800	22,250	275,057	596,348
Sheet steel sales (net tons)[f]	261,439	191,511	128,957	1,144,985	.....
Sheet steel production (net tons)[f]	210,448	224,056	143,309	1,225,893	.....
Fabricated shape orders (net tons)[g]	.....	145,553	120,690	518,990	.....
Fabricated shape shipments (net tons)[g]	.....	134,623	91,608	504,638	.....
Fabricated plate orders (net tons)[d]	.....	49,285	17,914	99,462	.....
Reinforcing bar awards (net tons)[e]	14,505	19,725	10,585	110,505	176,595
U. S. Steel Corpn. shipments (tons)[h]	886,065	984,097	578,108	3,553,999	5,031,350
Ohio River steel shipments (net tons)[i]	.....	86,004	80,620	408,648	.....
Fabricated Products:					
Automobile production, U. S. and Canada[k]	*445,000	480,571	376,993	2,373,173	‡2,570,422
Construction contracts, 37 Eastern States[l]	$233,054,600	$216,070,700	$148,005,200	$696,507,000	$1,237,731,000
Steel barrel shipments (number)[d]	.....	721,021	501,730	3,032,964	.....
Steel furniture shipments (dollars)[d]	.....	$1,451,199	$1,137,173	$6,898,572	.....
Steel boiler orders (sq. ft.)[d]	.....	723,343	392,345	2,673,633	.....
Locomotive orders (number)[m]	24	10	3	16	122
Freight car orders (number)[m]	4,320	9,677	5,151	6,583	26,554
Machine tool index[n]	128.8	118.9	91.1	†76.7	†124.5
Foundry equipment index[o]	141.4	165.4	100.2	†94.6	.....
Foreign Trade:					
Total iron and steel imports (gross tons)[p]	.....	59,391	33,208	182,891	.....
Imports of pig iron (gross tons)[p]	.....	15,296	6,583	53,486	.....
Imports of all rolled steel (gross tons)[p]	.....	20,994	19,678	92,972	.....
Total iron and steel exports (gross tons)[p]	.....	314,950	289,687	1,595,934	.....
Exports of all rolled steel (gross tons)[p]	.....	93,686	65,319	411,313	.....
Exports of finished steel (gross tons)[p]	.....	86,346	60,643	365,105	.....
Exports of scrap (gross tons)[p]	.....	217,439	215,098	1,115,942	.....
British Production:					
British pig iron production (gross tons)[r]	644,100	661,000	529,300	3,173,000	3,749,100
British steel ingot production (gross tons)[r]	965,900	963,000	770,000	4,801,200	5,744,200
Non-Ferrous Metals:					
Lead production (net tons)[s]	38,818	41,551	33,002	192,479	224,015
Lead shipments (net tons)[s]	37,736	33,125	26,978	195,432	215,737
Zinc production (net tons)[t]	44,947	44,905	34,637	209,876	253,732
Zinc shipments (net tons)[t]	41,654	43,977	29,353	214,972	252,487
Deliveries of tin (gross tons)[v]	7,795	5,235	4,615	28,390	37,020

† Three months' average. * Estimated. ‡ Partially estimated.

Source of figures [a] Lake Superior Iron Ore Association; [b] Bureau of Mines; [c] THE IRON AGE; [d] Bureau of the Census; [e] American Iron and Steel Institute; [f] National Association of Flat-Rolled Steel Manufacturers; [g] American Institute of Steel Construction; [h] United States Steel Corp; [i] United States Engineer, Pittsburgh; [k] When preliminary, from Automobile Manufacturers Association—Final figures from Bureau of the Census; [l] F. W. Dodge Corp.; [m] *Railway Age;* [n] National Machine Tool Builders Association; [o] Foundry Equipment Manufacturers Association; [p] Department of Commerce; [r] British Iron and Steel Federation; [s] American Bureau of Metal Statistics; [t] American Zinc Institute, Inc.; [v] New York Commodities Exchange.



(Figures represent percentages of 1925-27 production)

Same Week Last Month	*Preceding Week*	*Last Week*		*Same Week 1935*	*Same Week 1934*	*Same Week 1933*
79.0	**79.9**	**85.5**	**COMBINED INDEX**	**61.6**	**48.7**	**65.0**
97.8	101.4	103.2	Steel Ingot Production	61.9	39.2	80.0
92.7	92.1	106.9	Automobile Production	91.0	62.0	73.4
62.3	58.6	65.0	Lumber Shipments	53.9	51.8	63.1
86.2	87.9	90.0	Pittsburgh Industrial Production	63.7	51.2	77.0
57.0	59.4	62.3	Heavy Engineering Construction	37.3	39.4	31.8

REGISTERING gains in all five components the composite figure of the IRON AGE'S weekly capital goods index rose last week 5.6 points to 85.5 per cent of the 1925-27 average to attain the highest point since August, 1930. Actuated primarily by increased production following the letdowns occasioned by the severe heat of the past few weeks, this mark also indicates the continuance of the contra-seasonal spurt in business activity which has been the outstanding feature of the index for the past several weeks.

The increase was due mainly to the influence exerted by the automobile and lumber factors of the index. Automobile production, which was affected most heavily by the hot weather, rebounded strongly to 96,863 units, and rose 14.8 points when the adjustment for seasonal fluctuation was made. Lumber shipments increased 2968 carloads over those of the preceding week when the seasonal trend calls for a reduction in that activity, thus resulting in an advance of 6.8 points. Steel mill activity continued its high pace and advanced 1.8 points to the highest mark since 1930 as the rate of operations reached a near peak for the year of 71 per cent. Pittsburgh industrial activity and heavy engineering construction rose 2.1 points and 2.9 points respectively.

Components of The Index (1) Steel Ingot Production Rate, from THE IRON AGE; (2) Automobile Production, from Cram's Reports, Inc.; (3) Revenue Freight Carloadings of Forest Products, from Association of American Railroads; (4) Industrial Productive Activity in Pittsburgh District, from Bureau of Business Research of University of Pittsburgh; (5) Heavy Construction Contract Awards, from *Engineering News-Record.*

WASHINGTON. . . . . .

. . . Federal Trade Commission will pass upon provisions of Patman-Robinson Law as individual cases arise. Price differential "ceilings" may be established by commission.

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. . . Goodyear cancels tire contract with Sears-Roebuck on grounds of impossibility of fulfillment under new act.

o o o

. . . Economic Royalist John L. Lewis adds steel fabricators to his prospective labor empire.

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By L. W. MOFFETT
Resident Washington Editor, The Iron Age

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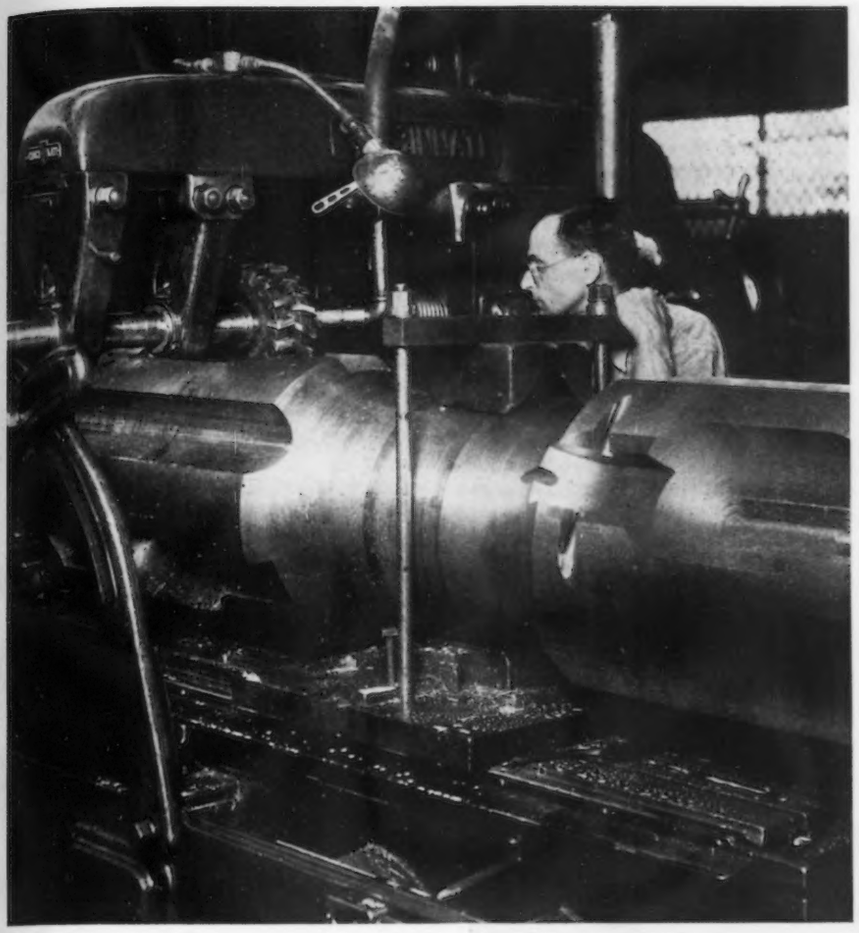
WASHINGTON, July 28. — Clearly, the Federal Trade Commission is finding the Patman-Robinson anti-price discrimination law a hard nut to crack. This is evidenced by the fact that it has not attempted and it has been announced will not attempt a blanket interpretation of the law. In response to many requests from business interests for construction of its various provisions, the commission has contented itself with and made available a compilation by Chief Counsel W. T. Kelley and Trial Attorney A. W. BeBirny which consists merely of statements by committees reporting the bill at hearings and debates in Congress. It is the purpose of the commission to pass upon provisions of the new law as they arise in individual cases which come before it. The circumspect position of the commission is understandable. For the law is extremely complex. There are two points, however, on which there is common agreement. One is that it gives wide powers to the commission. Another is that the constitutionality of some features of the act are extremely doubtful.

Among the broad powers given the commission is the right to fix maximum discounts. This may be done where it is held that available purchasers in greater quantities are so few as to render differentials above fixed maximum limits unjustly discriminatory or promotive of monopoly. Both steel producers and steel consumers have manifested great interest on this point. Neither might agree with the commission, but the power to fix a "ceiling" on discounts rests with the commission. And the burden of proof in justification of a discount is placed upon the seller. It is a reversal of the principle of the English common law.

Justifying Differentials

A price differential based on a large quantity purchase is permissible if justified by the actual difference in cost resulting from the manufacture, sale or delivery of the large purchase. Still a seller might amply demonstrate economies to justify such a differential, yet the commission can set a maximum quantity discount limit. The limit may not be as great as the economies profitably would permit. If the commission concludes that purchasers in greater quantities are so few that differentials above its fixed limit constitute unjust discrimination or promote monopoly, the seller must submit to the quantity discounts determined by the commission or face severe penalty. For refusal of a seller to do so would subject him to triple damages, commission proceedings and even imprisonment.

This is only one of the many factors set up by the new law, enacted as an amendment to the Clayton anti-trust law. Another is that which permits differentials by reason of "differing methods" of sale and delivery. A like tonnage of steel might be sold to two large purchasers at the same time with price variations. Moved in one lot to a warehouse, for example, delivery would cost less than if distributed to a number of points for another buyer, whether by rail, truck or otherwise. The seller could make allowance in price as the result of saving in the costs of single delivery. The same applies as to purchases under favorable seasonal and labor conditions or their absence. But just where would the commission fix the discount limit if it established one? Since the burden is placed on the seller, it is readily seen that he might have to set up an extensive system of cost accounting, and maintain exhaustive records for submission to the court. Or if he found it necessary in order to main-



CINCINNATI

Rugged Power

. . . ALL YOU WILL EVER NEED

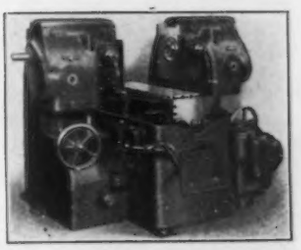
The job illustrated here is unusual for a bed-type milling machine, but it illustrates the possibilities of profitable milling on a Cincinnati Hydromatic.

Square slots, 4" wide and 3¼" deep are being milled in this rotary oil well reamer, the world's largest. The half-round slots also were milled on this machine. These husky cuts, requiring tremendous driving power are possible only by virtue of the locked hydraulic feed and the rigid design of the machine. And notice the smooth finish. No wash-board effect here. Consider also, the efficient automatic oil shot lubrication system to the table-bed ways, a feature which permits the high unit bearing pressures produced by this giant oil-well reamer. These profitable features are characteristic of all Cincinnati Hydromatics regardless of their size or style.

The illustration probably suggests to you many jobs in your own shop which could be milled better on a Cincinnati Hydromatic. Remember, too, that job lot quantities are as proportionately profitable as high production runs. A wide range of sizes and styles of Hydromatics are available for milling parts ranging from the size of a small wrench to the oil well reamer in the picture. Write to our Service Department—they will give you a truthful and accurate statement on the possibilities of milling your parts on the Hydromatic.

THE CINCINNATI MILLING MACHINE CO.

CINCINNATI, OHIO, U.S.A.



A Cincinnati Plain Hydromatic Milling Machine. Table travels range from 24" to 90". Write for Booklet M-655.

A Cincinnati Duplex Hydromatic Milling Machine. Many combinations of standard units permit you to specify unusual requirements. Write for Booklet M-655.

tain business he might get from under the new law by setting up separate sales departments with warehouses to sell only within given states so that transactions would be purely intrastate. There might also result under the right to select a reclassification of buyers into either small or large groups.

Goodyear Cancels Sears, Roebuck Contract

Already the act has resulted in the Goodyear Tire & Rubber Co. cancelling a tire contract with Sears, Roebuck & Co. which has accounted for about 6 per cent of Goodyear's annual business since 1926. The contract was to have expired in 1942. P. W. Litchfield, president of the Goodyear company, announced, however, that the terms of the Robinson-Patman act are such that Goodyear was unable to fulfill the requirements of the contract. The provision in the act which brought about termination of the contract is the one authorizing the commission to fix maximum quantity discounts. The commission, some time ago, prior to enactment of the Robinson-Patman law, issued a cease and desist order against Goodyear in connection with the Sears, Roebuck & Co. contract on the grounds of unjust price discrimination. The company has announced it will press its appeal in the courts from this order.

An interesting and significant development is the announcement of Sears, Roebuck & Co. that it is arranging to have its special brand tires made by producers who do not come under the Robinson-Patman act because of their limited number of accounts, all of which are made on equal terms. This case has been cited to show how purposes of the act may be legitimately defeated. Another point made in this connection is that large purchasers can still further increase their power of advantageous buying by reason of volume by setting up their own supply sources and become self-contained. It is reported that this move toward so-called "vertical trusts" is already under way by some chain stores.

Constitutionality Doubted

Finally, it is certain it will breed a vast amount of litigation both as to its individual features and its constitutionality. That Representative Patman, one of the sponsors of the act, evidently has doubts as to its constitutionality is indicated by the fact that he has proposed state laws modeled after the Federal act. Also fear that the latter will build up so-called "vertical trusts" is reflected in a bill Patman has proposed, and if he is reelected he will again introduce, which would separate production and distribution.

Pig Iron Imports in First Half 97,507 Tons

WASHINGTON, July 28.—Declining 7.5 per cent in volume, imports of iron and steel in June aggregated 40,323 gross tons, valued at $1,657,194 compared with 43,696 tons, valued at $1,766,599 in May. For the first six months of the current year, however, imports rose to 253,046 tons, valued at $10,063,609 against 170,807 tons, valued at $7,517,268, in the corresponding period of last year. Of the imports in the first half of 1936, pig iron constituted 97,507 tons, a gain of 81 per cent over such incoming shipments in the first half of 1935.

Imports of pig iron in June totaled 16,793 tons. The largest shipments, 6829 tons, came from British India. The Netherlands ranked second as the originating source, supplying 4798 tons, while the United Kingdom ranked third, furnishing 2554 tons. The heaviest finished line imported was structural material. Of the 3157 tons imported, all but 37 tons was plain material, of which Belgium supplied 1917 tons. Imports of hollow or solid steel bars, including merchant bars, amounted to 2111 tons, of which Belgium furnished 1560 tons and Sweden 294 tons. Imports of "other pipe," including seamless tubes, were 1526 tons, Germany supplying 1136 tons and Sweden 302 tons.

Imports of ferromanganese totaled 2222 tons, 1189 tons coming from Norway, 517 tons from the Netherlands, and 437 tons from France. Of the 5285 tons of spiegeleisen imported, 4712 tons came from Canada.

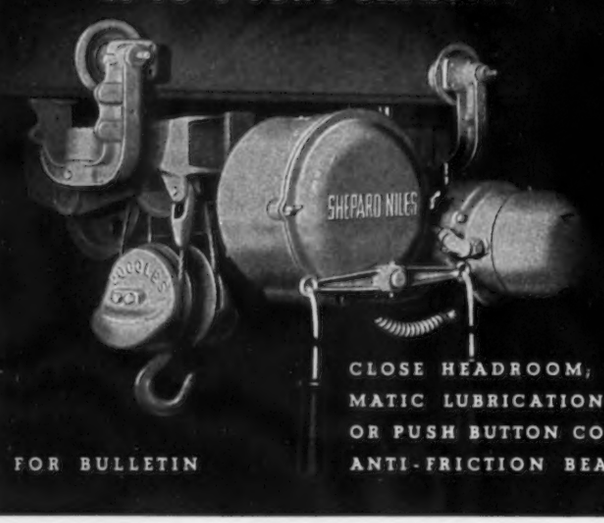
Incoming shipments of manganese concentrates were 29,300 tons. Russia supplies 18,528 tons, the Gold Coast of West Africa, 6994 tons, and British India, 3492 tons.

SHEPARD NILES

DIRECT WORM DRIVE

Electric Hoists

1/4 TO 6 TONS CAPACITY



CLOSE HEADROOM, AUTOMATIC LUBRICATION, ROPE OR PUSH BUTTON CONTROL, ANTI-FRICTION BEARINGS

WRITE FOR BULLETIN

SHEPARD NILES CRANE & HOIST CORP.

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MOST COMPREHENSIVE LINE OF CRANES & HOISTS

Royalist Lewis Adds Fabricators To His Prospective Empire

THE increasingly ambitious Committee for Industrial Organization has announced expansion of its unionization campaign to include 1,000,000 workers. Its foray into steel, automobiles, textiles, rubber, and so on, to say nothing of its red-hot row with its parent, the American Federation of Labor, as represented by the latter's craft union-dominated Executive Council, was insufficient for its Caesar-like yearning. So to add to its meat it has turned to new tonnage. It proposes to organize vertically the steel fabricating and steel processing plants, and in a single gulp swallowing a mere total of 450,000 workers, including craft unionists. Moreover, it is "considering" organization of 40,000 employees in the aluminum industry. At least these plans have been stated by Philip Murray, field general for John L. Lewis, head of the CIO. Mr. Murray strutted forth with this announcement soon after the rebel CIO thumbed its nose at President Green of the A. F. of L. and its Executive Council.

Actually, however, the idea of organizing steel from ore to the most highly finished product is not new. Mr. Lewis broached the matter during the dizzy days of the Blue Eagle. It was the great stumbling block which forestalled a steel fabricators' code. Not only was the plan contested by steel fabricators, equally as much opposition came from craft unions in the construction industry. And it is likely that the CIO stirred up the "drive" in the fabricating and steel processing industries further to goad the craft unions with which it is at war. Not that this or even industrial unionization is the primary purpose. Primarily it is not a labor situation. It is, first of all, a political situation. Support of the New Deal during the present Presidential campaign and inauguration of its own Labor party for 1940, with an eye on the White House.

Eyes on White House

Believe it or not, that is pictured as the real ambition of the CIO. The nucleus it is now seeking to create. Its loud claims obviously are greatly discounted. Nevertheless, its drives are not treated lightly. They have the elements of trouble, though the view persists that because of adverse political repercussions they would have on the New Deal campaign, efforts will be made to avoid widespread strikes at least until after the November election.

Mr. Green ought to know, and for that reason great weight is given to his view that the CIO is busily propagandizing. At least, Mr. Green came back with the charge of propaganda in answer to the Lewis-written CIO letter in which 12 unions stingingly rejected the executive council's summons of the rebels to trial for "dual unionism" and rebellion before the council at its meeting in Washington Aug. 3. Lewis said the council had no jurisdiction to suspend the CIO. The issue may come to the floor of the A. F. of L. convention in Tampa in November. Or, as seems more probable, the council, at its next meeting, may vote suspension of the CIO in an effort to prevent the rebels from getting into the convention. A council vote of suspension promises a definite break of A. F. of L. into two factions. The supposition is that the CIO would then form its own organization.

In any event, the situation rises above even that of a historic chapter in A. F. of L. history because of its political implications. And it is no wonder that New Dealers are greatly disturbed lest it will develop broad defections in a hitherto hoped-for (perhaps without

This Valve or **This Valve** or **This Valve**

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real justification) solid organized labor vote.

And as to ambitions, Mr. Lewis has said he was aware that there is speculation as to what would happen if a labor monopoly were established.

"You can't bond posterity," was his enigmatic reply, placed on poor rhetorical stilts.

There was no obscurity, however, in the criticism by Lewis and his colleagues of Gov. Alfred M. Landon's labor plank which he so forthrightly set forth in his acceptance speech. As if poised for the attack, Lewis, Sidney Hillman and Major George L. Berry, ardent New Deal campaigners, pounced simultaneously and eagerly, though weakly, on the Governor immediately after he declared that employees must be free from coercion "from any source." Each of the three laid down a barrage. The Berry blast came not from Berry as "coordinator" of industry, but from Berry, president of labor's "Non-Partisan" League. Berry's was the longest tirade, but was typical of the others and typical, of course, of the traditional attitude of organized labor which wants the law to stand as it is, making "coercion" possible only at the hands of employers—impossible at the hands of labor, whether organized or not. And the New Deal labor plank, approved, if not dictated, by Lewis, would continue the present law. The Landon position obviously is fair equally to labor and employer, to union workers and non-union workers, protecting each group from coercion, and is not open to legitimate attack. But the old saw was put to work again. The plank was branded as originating with the National Association of Manufacturers, though previously the steel industry was charged with having dictated the plank. It was criticised as a company union plank.

Herbert G. R. Bennett Heads Steel Engineers

HERBERT G. R. BENNETT, assistant general superintendent, Carnegie-Illinois Steel Corp., Duquesne works, has been elected president of the Association of Iron and Steel Engineers for the coming fiscal year, succeeding G. R. Carroll, Jones & Laughlin Steel Corp. Mr. Bennett began work in the steel industry in 1901 as secretary to the chief engineer, American Steel Hoop Co. He went with Carnegie Steel Co., Youngstown, in 1907, as special engineer, later holding the positions of master mechanic, assistant superintendent of bar mills, and in 1933 he was advanced to his present position with the company.

H. G. R. BENNETT

Other officers elected are: First vice-president, L. F. Coffin, Bethlehem Steel Co.; second vice-president, C. C. Wales, Otis Steel Co.; treasurer, F. E. Flynn, Republic Steel Corp.; secretary, J. L. Miller, Carnegie-Illinois Steel Corp.; director-at-large, C. L. McGranahan, Jones & Laughlin Steel Corp. Other directors are: C. C. Pecu, Bethlehem Steel Corp.; J. W. Bates, Carnegie-Illinois Steel Corp.; M. J. Conway, Lukens Steel Co.; J. A. Clauss, Great Lakes Steel Corp.; H. G. Hague, Carnegie-Illinois Steel Corp.; G. N. Hughes, Gulf States Steel Co.; F. E. Leahy, Youngstown Sheet & Tube Co.; W. A. Perry, Inland Steel Co.; and R. G. Adair, American Rolling Mill Co.

Gear Makers Arrange Convention Cruise

THE American Gear Manufacturers Association will hold its 9th semi-annual convention Sept. 8-10, aboard the steamer Seeandbee of the Cleveland & Buffalo Transit Co.

The Seeandbee will sail from Chicago on Tuesday morning, Sept. 8. A stop will be made at Mackinac Island on Wednesday morning, Sept. 9, after which the ship will cruise through the Georgian Bay and on Thursday morning through the St. Clair River, finishing the trip at Cleveland on the evening of Sept. 10 in time to permit making rail connections or to procure hotel accommodations for those desiring to stay over to visit the Great Lakes Exposition at Cleveland.

Business and technical sessions will be held in the ship's ball room during the cruise. A program of social events has been arranged. Rates and other particulars regarding the convention cruise may be had from J. C. McQuiston, manager-secretary of the association, Penn-Lincoln Hotel, Wilkinsburg, Pa.

HY-TEN "M" TEMPER

HIGH CARBON NI-CR-MO ALLOY STEEL

HARD AND TOUGH WHEN OIL-HARDENED

ANNEALED ROUND AND FLAT SECTIONS IN STOCK

WHEELOCK, LOVEJOY & COMPANY, Inc.

CAMBRIDGE CLEVELAND CHICAGO NEWARK DETROIT BUFFALO

Coke Output in 1935 12 Per Cent Higher

FOR the third consecutive year, coke production in 1935 registered an impressive gain over the depression low point of 1932. According to the latest statistics of the Bureau of Mines, production of both beehive and by-product coke during 1935 totaled 35,141,261 net tons, which represents a 12 per cent gain over the 31,821,576 tons produced in 1934. Most of the increase in 1935, as in the two preceding years, was accounted for by accelerated activity in the metallurgical industries.

Production of coke in beehive ovens during 1935 is of particular significance, as there was actually a decline despite a generally increasing demand for coke. Beehive output totaled 917,208 tons, compared with 1,028,765 tons in 1934 and 19,379,870 tons in the record year 1923. On the other hand, by-product coke production in 1935 totaled 34,224,053 tons, compared with 30,792,811 tons in 1934 and 37,597,664 tons produced in 1923.

Consumption of foundry coke increased from 1,262,139 tons in 1934 to 1,484,453 tons in 1935. However, consumption of coke by domestic users, which has generally shown a constant increase during recent years, actually declined in 1935 from 10,520,295 tons in 1934 to 9,426,386 tons in 1935.

The Bureau of Mines report also shows that the average spot price of Connellsville coke during 1935 was $3.61, f.o.b. ovens, compared with $3.77 a ton in 1934. The average selling price of foundry coke rose from $6.38 in 1934 to $6.96 a ton in 1935.

Steel Construction Conference in Berlin

THE Fifth International Conference on Steel Construction has been called to meet in Berlin on Oct. 2, 5 and 7 next. This is an organization composed of the various national steel associations. The American Institute of Steel Construction, Inc., is the member from the United States. Other members are similar organizations in England, Germany, France, Belgium, Holland, Italy, Poland, Russia, Czechoslovakia and other steel-producing countries.

The meeting days have been so arranged that the attending delegates may alternate by attending the conference of the International Association of Bridge and Structural Engineering which will meet in Berlin at the same time.

On Oct. 2 will be the presentation and discussion of annual reports from the various steel countries to be followed by several papers on "The Influence of the Recent Progress of Science and Technique in the Use of Steel."

On Oct. 5 will be a discussion on "The Use of Steel in the Construction of Protected Areas from Air Raids" and a discussion on "The Relations between the Architect, Engineer and Contractor in the Various Member Countries."

On Oct. 7 will be a review of the European specifications for the use of steel in buildings. The standard specification of the American Institute of Steel Construction, which was this year raised to 20,000 lb. unit stress, is just being brought into conformity with the specification that has already been in use in European countries for some time.

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In our own warehouses, as well as those of our distributors, you will find thousands of bars and shapes in hundreds of classifications—each one ticketed with a complete record of its chemical and physical characteristics.

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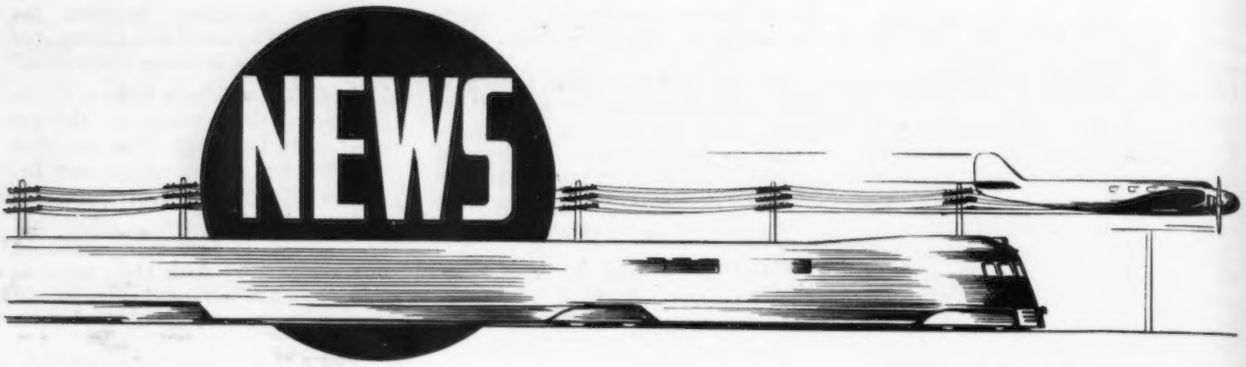

Steel Companies Adopt Overtime Pay Schedule for Employees

FOLLOWING the lead of the United States Steel Corp., the principal steel companies have established a new schedule of payment for overtime work, effective Aug. 1. Heretofore when overtime work was necessary the employees received pay at the regular rate. Hereafter time and a half will be paid for overtime in excess of 8 hr. in one day and weekly overtime will also be paid when the employee has worked in excess of six consecutive six-hour or six-turn periods within one week.

This plan establishes the basic 48-hr. week in the steel industry. During the NRA code the maximum number of hours permitted was 40. Last year the employees of the United States Steel Corp. averaged 33.9 hr. per week under the plan of spreading work as fairly as possible.

The announcement of the United States Steel Corp., released on July 23, was as follows:

"After conferences with employee representatives, a uniform arrangement for the payment of overtime, effective Aug. 1, 1936, has been approved by the United States Steel Corp. and its subsidiary companies. The whole question has been under consideration for some time.

"The schedule covers overtime payment for hourly, piece-work, or tonnage employees. The regular schedule of daily and weekly hours is established on a basis not to exceed 8 hr. a day, or more than six regular turns, without at least a 24-hr. intermission, thus providing for one day of rest in seven.

"When employees are requested by the company to work beyond the above schedule to meet emergencies, the following bases of payment for overtime shall apply:

"Daily Overtime—Time and one-half time will be paid for time worked in excess of 8 hr. per day. This provision will only apply when the overtime in any one day exceeds 15 min.

"Weekly Overtime—Time and one-half time will be paid for time worked in excess of the regular six-day or six-turn weekly working schedule, provided the employee has worked six consecutive days or turns."

Armco to Acquire Rustless Iron Stock

THE financial plan by which the American Rolling Mill Co., Middletown, Ohio, will acquire an interest in the Rustless Iron Corp., Baltimore, manufacturer of rustless steel, was disclosed in a statement filed with the New York Stock Exchange.

The American Rolling Mill Co. applied for listing of 25,630 shares of its common stock, of which 21,000 shares are to be exchanged for 100,000 shares of no-par stock of the Rustless Iron Corp. and the remaining 4630 shares are to be given to Payson & Co., brokers in the transaction, for an option running until Sept. 15 on an addi-

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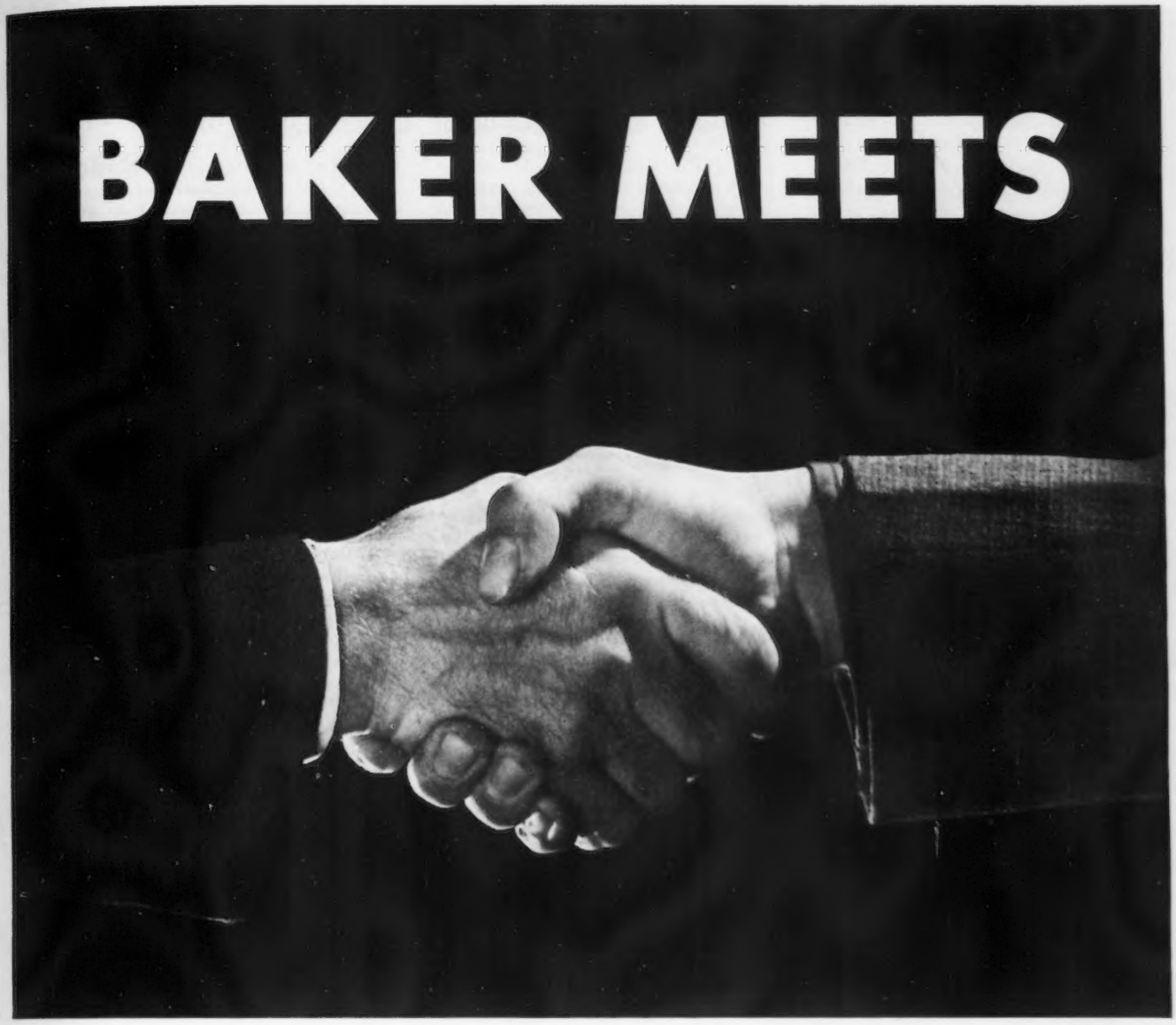
BAKER MEETS



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Let us check blueprints or a sample. Our prompt recommendation may show you the way to definite savings. Baker Brothers, Incorporated, Toledo, Ohio.

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tional 50,000 shares at $2.50 a share. If this option is exercised, the American Rolling Mill Co.'s investment in the Rustless Iron Corp., on the basis of the $25 per share par value of American Rolling Mill stock, will be $640,750.

The Rustless company had total assets, as of Dec. 31, 1935, of $1,326,233 and net earnings in 1935 of $166,132. Authorized capitalization is 1,000,000 shares of stock, of which American Rolling Mill Co. will acquire 150,000 shares.

Toledo Yard to Build 10 Fast Lake Boats

CONSTRUCTION of 10 80-passenger, streamlined motor cruisers, with a top speed of 45 miles per hr., will be started at once by G. & G. Motor Boat Lines, Inc., at its shipyard in Toledo. The first ships will be used in a new fast lake passenger and freight service between Detroit, Toledo, Sandusky and Cleveland, starting about Sept. 1.

The new motor cruiser will be of a special design. The ships will have aluminum alloy hulls and will be powered by two 500-hp. Diesel engines. The boats will be 100 ft. long with a 22-ft. beam and a 2-ft. draft. Each will cost about $20,000.

Steel Workers Exceed 1929 Total; No Technological Unemployment

EMPLOYMENT in the steel industry this spring exceeded the number at work in 1929, according to a statement issued by the American Iron and Steel Institute. In May of this year almost 492,000 were employed in iron and steel plants, of whom 445,800 were wage-earning employees, against a total employment in 1929 of 460,000.

"With steel employment above the 1929 level, and showing a sharp, upward trend," says the institute," the substitution of mechanical assistance for the back-breaking portion of human effort cannot have caused widespread technological unemployment which some critics attribute to mechanization.

"Adoption of mass production methods in the steel industry over a period of years, on the contrary, appears to have increased aggregate employment by making possible the production of greater tonnage of better quality at lower cost for ever widening markets."

The institute also comments on the fact, as shown by records of the census of manufactures of the United States, that employment in the steel industry has increased more rapidly than has employment in other manufacturing industries. Since 1879 employment in the steel industry has increased at an average rate of 3.1 per cent per year, while employment in all other industries has increased at an average annual rate of 2.7 per cent. In 1879 the number of wage earners in the industry was 140,798 against 492,000 in May, 1936.

Government to Issue Machinery News

THE Bureau of Foreign and Domestic Commerce, Washington, has begun the publication of a monthly paper entitled "World Machinery News," under the direction of Lewis M. Lind, acting chief of the machinery division. Three issues of the publication have been distributed experimentally to a selected list during the past six months, but beginning with the August issue it will appear each month.

Contents will include an editorial page of special interest to trade associations and industrial groups. There will be regular reports on world-wide activities that involve the possible use of American machinery. Government agents such as commercial attaches and consuls will furnish information that will be of interest to the American machinery manufacturers. Domestic matters also will be included, as, for example, explanations of inquiry and purchase procedure of Federal departments and purchasing bureaus.

British Steel Institute Announces Nominations

THE Council of the Iron and Steel Institute, London, England, announces that Alfred Hutchinson, M.A., B.Sc., vice-president (director of the Skinningrove Iron Co., Ltd.), has been nominated president of the British iron and steel institute, to take office in May, 1937, on the retirement of the present president, Sir Harold Carpenter, F.R.S. and that the Right Hon. the Earl of Dudley, M.C., member of council (chairman of the Earl of Dudley's Round Oak Works, Ltd.), has been nominated president to take office in May, 1938.

★
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Our concentration on tubing enables us to give customers the benefit of our special skill and experience. Large stocks available for immediate shipment—Tool Steel Tubing, Ball Bearing Tubing, Stainless Tubing, Aircraft Tubing, Hypodermic Tubing, Cold Drawn Mechanical Tubing, A.S.M.E. Boiler Tubing.

May We Serve You?

THE BISSETT STEEL COMPANY, Cleveland, O.
The Tubing Specialists

..PERSONALS..

B. L. HERMAN, manager of western New York and a portion of the Pennsylvania territory, has taken over the Philadelphia territory of THE IRON AGE. He will fill the vacancy caused by the death of Charles Lundberg.

He joined THE IRON AGE in 1916 as assistant to the advertising manager and later represented THE IRON AGE Catalog of American Exports in charge of the Cleveland office, covering Ohio and Michigan.

B. L. HERMAN

Later he took over the Buffalo office for THE IRON AGE.

Prior to the war he was in Germany about a year studying foreign trades. He also spent a year in England with an organization importing American machinery, acting as salesman in London and throughout the provinces. He left that work to enter the employ of Raphael Tuck & Sons, publishers of greeting cards, books and outdoor advertising posters. This organization sent him back to America to work in the New York branch.

He is well known in advertising circles and is active in the Rotary Club.

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CHARLES A. ROWAN, for the past four years president of the Westinghouse Air Brake Co. and vice-chairman of the board of directors of the Union Switch & Signal Co., has been elected chairman of both companies, succeeding A. L. Humphrey who becomes executive committee chairman for both organizations. Mr. Rowan's entire business career has been with the Westinghouse interests. He was first associated with the East Pittsburgh Improvement Co., and in 1903 became assistant auditor of the Westinghouse Air Brake Co. From that position he successively advanced to auditor in 1910, controller in 1916, vice-president and controller in 1919, and president of the Westinghouse International Brake & Signal Co. in 1927, with headquarters in Brussels, Belgium. In 1929 he was elected a member of the board of directors of the parent company. In 1930 he returned to Wilmerding to become executive vice-president of the Westinghouse Air Brake Co., and in 1932 was elected president of that company and vice-chairman of the board of directors of the Union Switch and Signal Co.

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GEORGE A. BLACKMORE, for four years vice-president and generai

UDYLITE SEMI-AUTOMATIC PLATING MACHINE

WHAT IT WILL DO FOR YOU . . .

Give better plating results as each piece is subjected to identical conditions, i. e. plating time, current density, etc. Deposits are uniform and rejects are reduced to a minimum.

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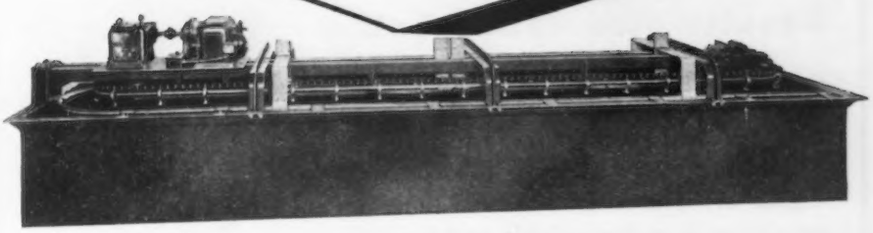

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manager of the Westinghouse Air Brake Co., has been elected to the presidency, succeeding CHARLES A. ROWAN, who was elected chairman of the board. Mr. Blackmore began his business career with the Union Switch & Signal Co. as office boy in 1896, and was made chief clerk of the engineering department in 1900. From 1904 until 1916 he was connected with the New York office, successively holding the positions of chief clerk, assistant Eastern manager, and Eastern manager. In 1916 he became general sales manager with headquarters at Swissvale. In 1917 he was elected second vice-president, in 1922 first vice-president, a director in 1925, and in 1929 president. He was also made vice-president and general manager of the Westinghouse Air Brake Co. in 1932, and elected a director thereof at the same time. Mr. Blackmore retains his position with the Union Switch & Signal Co., and is now president of both organizations.

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R. R. LAPELLE has become associated with the Salem Engineering Co., Salem, Ohio. He was formerly associated with the Electric Furnace Co. as sales engineer and was more recently section engineer in charge of furnace design for the Westinghouse Electric & Mfg. Co.

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LESTER F. BLOUGH has been elected vice-president in charge of motor sales of Emerson Electric Co., succeeding Milton C. Miller, who has resigned. OSCAR C. SCHMITT has been elected vice-president of the company in charge of fan sales and advertising.

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FRANK C. MILLER, who has been with the Detroit sales office of the Republic Steel Corp., has been appointed manager of sales of the tin plate division of Republic, effective Aug. 1. Mr. Miller succeeds George E. Totten, who recently resigned.

F. C. MILLER

P. H. Hubbard, who has been assistant in the tin plate sales division, and J. B. DeWolf, formerly district sales manager of the Philadelphia territory, have been made assistant managers. W. H. Ungashick, who was formerly associated with the Canton Tin Plate Co., which was recently acquired by Republic, has been appointed field man and J. T. McBride has been named as chief clerk of the division.

Mr. Miller was born in New York, where he attended Columbia University. Early in the war he enlisted with the British Royal Naval Air Service and was sent to the University of Toronto for six months' training period. From there he went overseas and was assigned to the observation corps commonly known as the "suicide squadron." He displayed his first sales efforts when he talked himself out of this squadron into the flying division of the Royal Flying Corps, where he remained for the duration of the war. In this division he was assigned to the hazardous task of escorting allied ships across the English Channel and protecting them from enemy air attack.

On his discharge from the service in 1919, Mr. Miller became associated with the Otis Steel Co., Cleveland, and a year later went to that company's Detroit office as salesman and while in that city was later associated with sales offices respectively of the Brier Hill Steel Co., Trumbull Steel Co., Republic Iron & Steel Co., and since 1930 with the Republic Steel Corp.

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HAROLD STEIN has been appointed research engineer of the manufacturing department of the Allis-Chalmers Mfg. Co., Milwaukee, to succeed J. Fletcher Harper, who has resigned. Mr. Stein is a graduate of Tri-State College, where he received his degree of bachelor of science in mechanical engineering in 1916. After a short period with the De La Vergne Machine Co. of New York he joined the Allis-Chalmers organization late in 1916 as a graduate student apprentice, serving in the erecting and forge shops. He held positions in the factory's heat treating department as general foreman of the entire forge shop and as assistant superintendent of the forge shop. In 1928 he was transferred to the company's research laboratories where he served for 7½ years as assistant research engineer. Mr. Stein has been co-author with Mr. Harper on a number of papers on forging and heat treating subjects. He has been active on a number of committees of the American Society for Metals.

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E. M. SCHULTHEIS has resigned his position with the Detroit office of the automotive division of the Timken Roller Bearing Co. to join the staff of the Clark Equipment Co. of Buchanan, Mich., producer

Results Are What Count

If you want real economy—look to results rather than to first cost. It is on this basis that "HERCULES" (Red-Strand) Wire Rope continues to make and hold friends. There are reasons, of course, why this wire rope is so dependable and long lasting, and we are always glad to give full details to everyone interested in saving money. Made in a wide range of constructions including Round Strand, Flattened Strand, Preformed, Non-Rotating and Steel Clad types.

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of automotive, railroad and agricultural equipment. Prior to joining the Timken organization in 1927, Mr. Schultheis was for many years connected with the White Motor Co. as experimental and design engineer and before that with the Aluminum Co. of America in the design and development of cars. Preceding this a number of years were spent with the Nordyke & Marmom Co., the Cole Motor Car Co., the Pope-Waverly Co. and the Premier Motor Corp.

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HENRY C. SCHNEIDER, for 27 years designing and development engineer at the main works of Fairbanks, Morse & Co., in Beloit, Wis., has resigned effective July 31, and will make his home in Chelsea, Mich., in partial retirement. He intends to devote some of his time to engineering work for the central Fiber Products Co., with plants in Chelsea and Detroit, in which he has held an interest for some years.

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W. P. DALRYMPLE, Bowen Road, Elma, Erie County, New York, has been appointed by the Claude B. Schneible Co., Chicago, as representative for Schneible multi-wash dust collectors in the Buffalo territory.

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WALTER H. PORTH, South American representative of the Bucyrus-Erie Co., South Milwaukee, Wis., is spending some time at the head office after two and a half years in the Argentine, Brazil and Chile. He previously spent three and a half years in the Latin American countries.

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ROBERT J. MCELLIGOTT, for many years a member of the sales staff of the Globe Steel Tubes Co., Milwaukee, stationed at the head office, has resigned effective Aug. 15, to become associated with the main office of the Allegheny Steel Co., Brackenridge, Pa.

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CHARLES S. DAVIS, president of Borg-Warner Corp., has been elected a director of the City National Bank and Trust Company, Chicago.

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LEONARD E. SHAFFER has been appointed Pacific Coast manager of the Kennedy Valve Manufacturing Company of Elmira, N. Y. Mr. Shaffer will be in charge of the Kennedy San Francisco branch at 448-450 Tenth Street, San Francisco, where a warehouse is maintained for stocks of Kennedy valves, pipe fittings, and fire hydrants. He will also continue to maintain his Los Angeles office at 1340 East Sixth Street, Los Angeles, where he has been the Kennedy southern California representative for many years.

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T. G. BAER has been appointed manager of the Buffalo office of the Timken Roller Bearing Co. Mr. Baer joined the Timken organization in 1929 immediately after finishing his engineering course at Purdue University. After completing his training in the Timken plant and engineering department Mr. Baer went to the Chicago office, where he has specialized on industrial sales.

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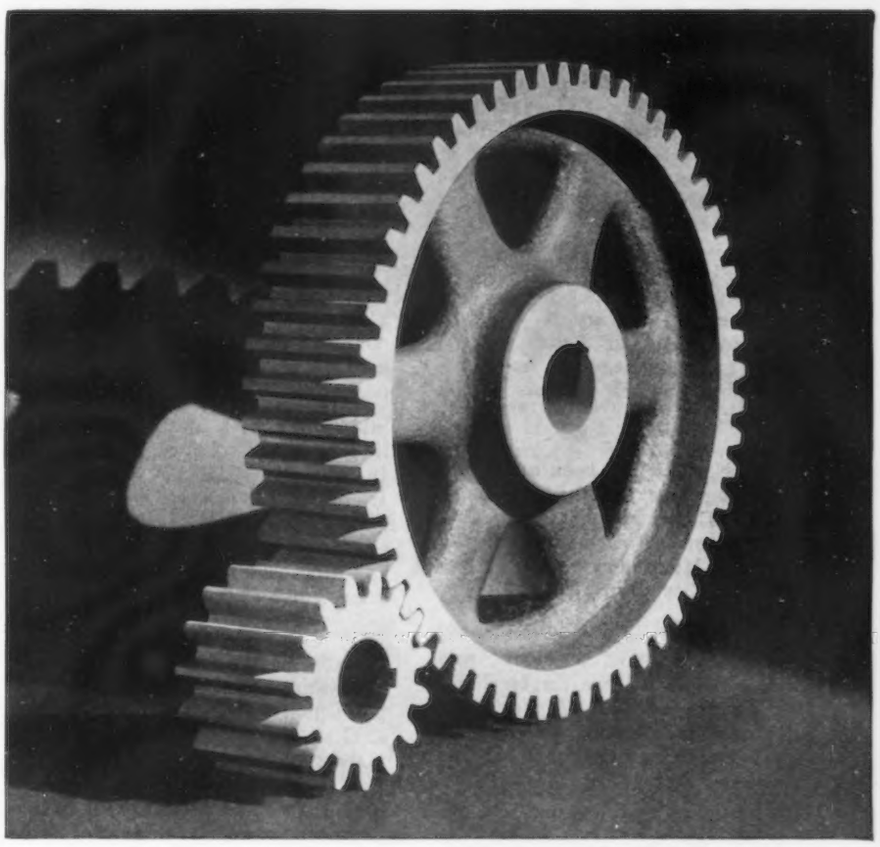
J. FLETCHER HARPER, research engineer of the manufacturing department of the Allis-Chalmers Mfg. Co., Milwaukee, has resigned to become associated with the Globe-Union Mfg. Co., Milwaukee, manufacturer of storage batteries, radio parts, steel roller skates and



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GEARS AND SPEED REDUCERS

5112 **HAMILTON AVENUE, CLEVELAND, OHIO U. S. A.**

other commodities. He is succeeded by Harold Stein. Mr. Harper, a graduate of the college of engineering of the University of Wisconsin, is widely known in the metallurgical field, and in 1927 was president of the American Society for Steel Treating, now the American Society for Metals. Before joining the Allis-Chalmers staff he was associated with the Northwestern Mfg. Co., Milwaukee, builder of electric motors, welding machines, etc., until this business was absorbed by the Harnischfeger Corp., Milwaukee.

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W. J. HERMES has been appointed representative for the Dumore Co., Racine, Wis., builder of precision grinders, tools and universal motors, in the metropolitan New York area. Mr. Hermes is located at 100 Varick Street, New York.

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RONALD WETHERINGTON has been appointed Toledo representative of the Toledo Steel Products Co., Toledo, to assist Howard K. Lang in the Middle Atlantic States according to an announcement made recently by Joe E. Adams, sales manager.

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CARL NYGREN has been appointed chief engineer of the Michiana Products Corp., Michigan City, Ind. Mr. Nygren was formerly with the Sullivan Machinery Co. at its Michigan City plant.

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NORMAN SAYLOR, president and sales manager of the Saylor-Beall Mfg. Co. for the past 16 years, has been appointed sales manager of the air conditioning division of Gar Wood Industries, Inc., Detroit.

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A. W. HOLMES has been transferred by Link-Belt Co., Chicago, from the Chicago engineering department to the position of sales engineer at the company's Pittsburgh office. Mr. Holmes has had wide experience both in the central office, and in field work not only the United States, but in Mexico and Russia.

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JOHN C. HASWELL, president and manager of the Dayton Malleable Iron Co. since 1915, was elected chairman-of-the-board of the company at a meeting of the board last week. WILLIAM B. RUNYAN was elected to the presidency, succeeding Mr. Haswell. At the same meeting, ANTHONY HASWELL was elected first vice-president of the company. Other officers are C. D. TOWNSEND, vice-president; C. E. SWANK, treasurer, and R. M. ROBINSON, secretary.

ROBERT W. GRAHAM has been appointed superintendent of the new 100-in. semi-continuous sheared-plate mill now under construction at the Homestead works of the Carnegie-Illinois Steel Corp. He started his business career with the Youngstown Sheet & Tube Co.,

R. W. GRAHAM

later going with the former Republic Iron & Steel Co. at Youngstown. In August, 1925, he went to the Homestead works, where he has been continuously employed. Mr. Graham is a graduate of Carnegie Institute of Technology with the degree of metallurgical engineer.

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Battelle Memorial Institute, Columbus, Ohio, announces the appointment of DIMITRY NICONOFF, J. G. DONALDSON and L. H. BERKELHAMER to the technical staff. Mr. Niconoff, who was formerly metallurgist for the Phelps-Dodge Corp., has been assigned to the division of process metallurgy at Battelle. Mr. Donaldson, who comes to Battelle from the Laclede Steel Co., has been assigned to the chemical division and Mr. Berkelhamer, who was formerly a Bureau of Mines fellow at the University of Washington, to the ceramics division.

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H. B. SMALL, well known in the pipe trade through his previous connections with the Wheatland Tube Co., Wheatland, Pa., and the Mercer Tube & Mfg. Co., Sharon, Pa., has organized the Western Steel Products Co. in association with a group of Philadelphians. Two shop buildings formerly used by the Claire furnace of the Davison Coke & Iron Co. at Sharpsville, Pa., will be utilized for the manufacture of pipe and tubing and plans call for the erection of a third building.

RICHARD P. EVANS, who has for many years represented William Jessop & Sons, Inc., over a large portion of the Middle West and Southeast, has been transferred from Chicago to the company's New York office. Mr. Evans has an unusually large circle of friends and acquaintances owing to the fact that he has divided his time during the last seven years more or less equally between the Atlanta, Cincinnati, St. Louis and Chicago offices. He has been with the company since 1918, when he started as an apprentice in the works at Sheffield, England.

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A. C. CUMMINS, general superintendent, Duquesne works, has been appointed assistant manager of operations, Pittsburgh district of the Carnegie-Illinois Steel Corp. Mr. Cummins was first employed by Duquesne works of Carnegie Steel Co. as an electrical draftsman in 1911, continuing in the company in various positions of responsibility until 1932, when he was appointed assistant general superintendent of the Duquesne works. In 1933 he was promoted to general superintendent, which position he has held to date. K. H. MCLAURIN, chief mechanical engineer, has been appointed superintendent of Duquesne works, succeeding Mr. Cummins. B. M. LIVEZEY, by-product coke plant, has been appointed assistant general superintendent of the Clairton steel works.

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JAMES M. HILL, of Canton Ohio, has been elected vice-president in charge of operations and general manager of Empire Sheet & Tin Plate Co. Mr. Hill, identified with the steel industry for nearly 25 years, recently resigned as assistant manager in the Canton-Massillon district of the Republic Steel Corp. For more than six years he has been in charge of the operations of the sheet and tin plate divisions, for the manufacture of all flat rolled products for the Republic Steel Corp. in that district.

Mr. Hill's earliest work in the industry started with his employment with the Reeves Mfg. Co. of Dover, Ohio, in 1912. Leaving that plant in 1915, he became associated with the Seneca Iron & Steel Co. at Blasdell, N. Y., as assistant general superintendent of all operations. From that post he advanced to an executive position with the Hydraulic Pressed Steel Co. at Cleveland in 1917. While with this concern, he was superintendent of the Canton division and subsequently oper-

ated sheet and jobbing mills at Apollo, Pa.

In 1922, Mr. Hill became identified with the Weirton Steel Co. and in August, 1927, was promoted to district manager in charge of the sheet and tin plate plants in Weirton - Steubenville - Clarksburg districts. He resigned his position with the Weirton Steel Co. to accept the post with Republic.

LUTHER BURDICK WEIDLEIN, 55, sales manager, Arthur G. McKee & Co., Cleveland, died at his summer home, North Kingsville, Ohio, July 20, after a long illness. He was graduated from Carnegie Institute of Technology in 1909 and was for several years with Carnegie Steel Co. at Youngstown. In 1919 he became associated with Arthur G. McKee & Co., becoming sales manager and a director in 1929.

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JAMES H. HAMMOND, 68, founder and former president and chairman of the board of the Superior Steel Corp., died at Pittsburgh July 20. He retired from the Superior Steel Corp. in 1929 but continued as chairman of the board of Copperweld Steel Co. until the time of his death. He was active in church and charitable work in his home city.

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ALEXANDER LUTTRELL, district sales manager of the Columbia Tool Steel Co., died at his home in Detroit on Saturday, July 25. Mr. Luttrell had been associated with the Columbia Tool Steel Co. for the past 23 years.

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ARTHUR BOOTH, 54, president of the Pittsburgh Supply Co., died at his Aspinwall suburban home July 23. He was purchasing agent of the Philadelphia Co. for 18 years prior to the organization of his own company in 1917.

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JOHN G. PLATT, president of Hunt-Spiller Mfg. Corp., Boston, since 1928, was drowned Sunday, July 26, when his outboard motor boat capsized in Long Pond, East Harwich, Mass. He was born in Zanesville, Ohio, in 1874.

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S. A. STROM, assistant general manager of the Donahue Steel Products Co., Chicago, dealer in used machinery, died suddenly July 25. Mr. Strom had served the company for 14 years.

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THOMAS PATTERSON, general superintendent, Gary plant, National Tube Co., died July 24 at Shreveport, La., after a prolonged illness. He was born in Scotland in 1878 and came to America when a youth. He attended Washington and Jefferson Academy and started work for the tube company in 1902. He was transferred from Pittsburgh to the Lorain plant, and in 1922 he moved to Gary.

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DAVID OWENS JAMES, founder and president and treasurer of the D. O. James Mfg. Co., Chicago, gear manufacturer, died July 18 at his summer house at Union Pier, Michigan, after a two weeks' illness. He was 76. Mr. James was born at Pottsville, Pa., in 1859 and went to Chicago when he was 15 years old. Funeral services were held from the Oak Park, Ill. home.

Corrosion Resistance Of Metals and Alloys

A 492-page book dealing with the general subject of corrosion of metals and alloys has just been published by Reinhold Publishing Co., 330 West 42nd Street, New York, for the American Chemical Society. The authors of this book, R. J. McKay and R. Worthington, ably summarize the known facts on corrosion processes and rates. No panacea is offered for corrosion difficulties, but the mechanism of corrosion and the manner in which various metals and alloys react in different media are given detailed treatment. It is pointed out that the present state of knowledge of non-ferrous alloy corrosion is not sufficient to enable workers to develop general methods of prevention; therefore, the cure in the majority of cases is to use the right alloy in the right place. A number of cases are cited in which definite improvements in corrosion resistance were obtained by modification of metals used.

Allegheny Steel Co. Merger Completed

PITTSBURGH, PA., July 27.—At special meetings of the stockholders of Allegheny Steel Co. and West Leechburg Steel Co. held here today the merger of the two companies was approved. The name of the surviving corporation will be Allegheny Steel Co.

The consummation of this merger provides an experienced organization and a complete integral steel plant with an annual ingot production capacity of 500,000 tons; with finishing facilities for the production of hot and cold-rolled strip steel in all qualities and grades in capacities approximating 20,000 tons per month, and finished sheets up to 72 in. wide in capacities in excess of 18,000 tons per month.

In addition Allegheny Steel has general facilities for the manufacture of hot and cold stampings, boiler tubes, lapweld steel pipe, seamless tubular products and steel castings.

Allegheny Steel has never had facilities for the commercial production of hot and cold-rolled strip steel, but the accelerated demand in recent years for stainless and magnetic steels in strip form has made it imperative that Allegheny Steel provide such facilities.

West Leechburg with modern strip plant capacity of over 250,000 tons annually, and an experienced strip-making organization, very satisfactorily meets these requirements.

According to W. F. Detwiler, executive vice-president of Allegheny Steel Co., no personnel changes in either company are contemplated. To the present seven members of Allegheny Steel board of directors, comprising H. E. Sheldon, L. W. Hicks, J. O. Carr, W. F. Detwiler, S. L. Whitestone, W. E. Ruder and A. E. Braun, will be added William C. Kirkpatrick and Malcolm W. Leech, representing the stockholders of West Leechburg Steel Co., and F. H. Stephens and V. B. Browne, representing Allegheny Steel Co.

LANDIS TOOL CO., manufacturers of cylindrical grinding machine, Waynesboro, Pa., has opened an office at 6910 Market Street, Upper Darby, Pa. It is in charge of C. M. Talhelm, who has represented the company in that territory for a number of years.

FABRICATED STEEL

. . . Lettings in smaller volume at 16,655 tons as against 20,515 tons last week.

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. . . New projects decline to 20,730 tons from 46,855 tons in the previous week.

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. . . Plate awards total 4245 tons.

NORTH ATLANTIC STATES

Bowdoinham, Me., 120 tons, State bridge, to American Bridge Co.

Ayer, Mass., 130 tons, State bridge, to Boston Bridge Works, Inc., Cambridge, Mass.

Hooksett, N. H., 100 tons, bridge repairs, to American Bridge Co.

New York, 360 tons, curb angles for United States Treasury Department Procurement Division, to Egleston Brothers & Co., Long Island City, N. Y.

New York, 960 tons, subway alteration, to Bethlehem Steel Co.

New York, 135 tons, Triborough bridge contract No. 73, to Jones & Laughlin Steel Corp.

Steuben County, N. Y., 145 tons, highway bridge, to Wisconsin Bridge & Iron Co., N. Milwaukee.

Orleans County, N. Y., 430 tons, highway bridge, to Fort Pitt Bridge Works Co., Pittsburgh.

Syracuse, N. Y., 340 tons, Maxwell school, Syracuse University, to Syracuse Engineering Co., Syracuse.

Buffalo, 270 tons, Kenfield Federal housing project, to Bethlehem Steel Co.

Riegelsville, N. J., 100 tons, building for Riegel Paper Co., to Easton Steel Structures, Inc.

Chester, Pa., 130 tons, Linde Air Products building, to Bethlehem Fabricators, Inc., Bethlehem, Pa.

Pittsburgh, 260 tons, grandstand, St. Vincent's College, to Pittsburgh-Des Moines Steel Co., Pittsburgh.

Punxsutawney, Pa., 600 tons, State highway bridge, to Bethlehem Steel Co.

Kingston, Pa., 500 tons, State highway bridge, to Bethlehem Steel Co.

Annville, Pa., 350 tons, lime plant for H. E. Millard & Co., to an unnamed bidder.

Baltimore, 285 tons, warehouse for Canton Co., to Dietrich Brothers Co., Baltimore.

Washington, 278 tons, garage and produce building, to West Rosslyn Steel Co.

SOUTH AND SOUTHWEST

Albuquerque, N. M., 1000 tons, bridge, to Missouri Valley Bridge & Iron Co., Leavenworth, Kan.

CENTRAL STATES

Detroit, 180 tons, warehouse, to R. C. Mahon Co., Detroit.

Whiting, Ind., 600 tons, extensions to buildings of Carbide & Carbon Chemical Co., to American Bridge Co.

Quincy, Ill., 2725 tons, dam No. 21, to American Bridge Co.

Milwaukee, 375 tons, malt house for Joseph Schlitz Brewing Co., to Worden-Allen Co.

Des Moines, Iowa, 550 tons, bridge, to Des Moines Steel Co.

Jefferson City, Mo., 1650 tons, penitentiary, to Kansas City Structural Steel Co., Kansas City, Kan.

Riley County, Kan., 1500 tons, bridge, to Kansas City Structural Steel Co.

WESTERN STATES

Laramie, Wyo., 200 tons, State bridge, to Midwest Steel & Iron Co.

Converse, Wyo., 116 tons, State overhead crossing, to an unnamed bidder.

Evanston, Wyo., 155 tons, State underpass, to an unnamed bidder.

Centralia, Wash., 113 tons, State overhead crossing, to Pacific Car & Foundry Co., Seattle.

Pasco, Wash., 280 tons, State undercrossing, to Bethlehem Steel Co.

San Francisco, 992 tons, State livestock building, to Bethlehem Steel Co.

San Francisco, 120 tons, ferry aprons at Yerba Buena Shoals, to Minneapolis-Moline Power Implement Co., Minneapolis.

Los Angeles, 100 tons, Alhambra and Verdugo Wash, Proposal No. 12, to Minneapolis-Moline Power Implement Co.

Oakland, Cal., 500 tons, addition to Moore Dry Dock Co. fabricating plant, to Columbia Steel Co., Los Angeles, and two other bidders.

NEW STRUCTURAL STEEL PROJECTS

NORTH ATLANTIC STATES

Canton-Norwood-Westward, Mass., 100 tons, bridge over Neponset River.

New York, 1000 tons, low-level approach to Triborough bridge.

Niagara Falls, N. Y., 230 tons, building for Carborundum Co.

Easton-Phillipsburg, Pa., bridge, 4500 tons; bids next week by Delaware River Joint Toll Bridge Commission, Philadelphia.

Washington, 900 tons, police court building.

SOUTH AND SOUTHWEST

Memphis, Tenn., 650 tons, bridge.

State of Mississippi, 4150 tons, bridges.

State of Texas, 3000 tons, bridges.

State of Louisiana, 2100 tons, bridges.

CENTRAL STATES

Columbus, Ohio, 285 tons, railroad underpass.

Ironton, Ohio, 576 tons, Lawrence County bridge; W. D. Dawson, Cleveland, contractor.

Cleveland, 232 tons, Granger Road bridge; bids July 28.

State of Ohio, 228 tons, Muskingum County bridge.

Toledo, 1100 tons, building for Libby-Owen-Ford Plate Glass Co.; A. Bentley Sons Co., general contractor.

Aurora, Ill., 500 tons, Campana Corp.

State of Wisconsin, 1000 tons, bridge.

Marathon County, Wis., 235 tons, two bridges; bids Aug. 5.

WESTERN STATES

Denver, 250 tons, United States Bureau of Public Roads office building.

State of Colorado, 150 tons, State highway bridges in three counties; bids Aug. 3.

Los Angeles, 20,000 tons, previously reported as San Francisco court house and post office; bids Aug. 24.

Los Angeles, 282 tons, Overland Avenue bridge for United States Engineers; bids Aug. 3.

Los Angeles, 450 tons, Hayfield pumping plant for Metropolitan Water District; bids Aug. 27.

Nisqually, Wash., 530 tons, bridge.

FABRICATED PLATES

AWARDS

Milwaukee, 1200 tons, 117 glass-lined storage tanks for Joseph Schlitz Brewing Co., to A. O. Smith Corp.

Milwaukee, 225 tons, 400,000-gal. tank, to Tippett & Wood, Phillipsburg, N. J.

Detroit, 390 tons, Detroit Edison Co., 48-in. pipe, to Semet-Solvay Engineering Corp., New York.

Denver, 1800 tons, conduit No. 16 for city, to Lock Joint Pipe Co.

Portland, Ore., 100 tons, bell buoys for Light House Department, to Commercial Iron Works.

San Francisco, 430 tons, Pilarcito and Stone dam aqueduct, to Western Pipe & Steel Co.

Los Angeles, 100 tons concrete car bodies for Department of Water and Power, to Pacific Iron & Steel Co.

NEW PROJECTS

Los Angeles, 970 tons, Hayfield pumping plant for Metropolitan Water District; bids Aug. 27.

SHEET PILING

AWARDS

Nome, Alaska, 160 tons, jetty construction, to Bethlehem Steel Co.

NEW PROJECTS

Ashton, Idaho, 400 tons, Grassy Lake dam; bids Aug. 7.

..GREAT BRITAIN..

...British iron and steel markets are quiet.

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...Additional furnaces being prepared in event of another shortage.

o o o

...Continental export business expanding slowly.

LONDON, (*By cable*) July 27.—British iron and steel markets are quiet as large consumers are covered for some months ahead and stabilized prices have discouraged speculators, but consumption and production are being maintained.

Pig iron users are postponing new purchases until after the August holidays. Supplies are temporarily easier but a stringency may again develop in the autumn and several additional furnaces are being prepared. Specifications for all descriptions of steel are taxing capacity. Pressure for structural steel is particularly heavy. Prospects for future activity are bright. Export trade is improving slowly.

Welsh tin plate production quota has been raised by 2½ points to 65 per cent of allotted capacity. Export demand is fair and home buying is being maintained, but output will be affected by the annual stop week commencing next week end.

Continental iron and steel export business is still expanding slowly and the work in hand assures steady employment during August. Belgian home demand is strong and home prices will be increased Aug. 1. French home prices have increased and business is now very quiet and further prospects are gloomy.

British prices for black and galvanized sheets have been raised 10s. for the home market, South Africa and Canada.

..TRADE NOTES..

Pioneer Engineering & Mfg. Co., Detroit, announces the purchase of the Cordua Engineering Co., also of Detroit. Owen Cordua, a die engineer of long experience, brings to the Pioneer company his organization of engineers especially trained in die design.

Marsh Tritrol Co. has been formed to take over the sales, engineering and servicing phases of the Tritrol system of heat regulation. The officers are: C. H. Olmsted, president, and H. T. Kucera, vice-president. C. H. Bevington, who has been identified with Tritrol sales as Chicago representative, is to be sales manager of the new organization, which is located at 720 North Michigan Avenue, Chicago. The Jas. P. Marsh Corp. is to continue to handle the manufacturing of the Tritrol units.

Beryllium Corp. of Pennsylvania, Reading, Pa., announces the opening of a non-ferrous foundry department specializing in the production of heat-treated castings of beryllium alloys. Present facilities will take care of both large and small castings for electrical parts, machine parts and dies of beryllium copper, and other special alloys. Special foundry technique has been developed to make possible the best combinations of properties for these heat-treatable non-ferrous alloys.

Magnetic Mfg. Co. has changed its name to the Stearns Magnetic Mfg. Co. as of Aug. 1. The change does not involve any revision in corporate structure, management, or plant location, it simply being an effort on the part of the company to more closely identify its products with its trademark name "Stearns."

Globe Steel Tubes Co., Milwaukee, has appointed the Bissett Steel Co., Cleveland, Ohio, as distributers for boiler and other pressure tubing.

International Nickel Enlarges Facilities

INCREASING interest by industry in the non-ferrous alloys as a weapon against rust and other forms of corrosion has made necessary an enlargement of the laboratory facilities at the Huntington, W. Va., plant of the International Nickel Co., Inc. New administrative offices will also be built and a new unit added to the open-hearth furnaces.

The plant, which produces Monel metal, pure nickel and Inconel in commercial shapes, is now operating at approximately the 1929 level; and a 25-ton open-hearth furnace will be built to bring ingot production in balance with the capacity of the rolling mills.

FINANCIAL NOTES

Allegheny Steel Co. has declared a dividend of 25c. a share and an extra dividend of 15c. a share on the common stock payable Sept. 16, 1936, to stockholders of record Sept. 1, 1936. A quarterly dividend of $1.75 was also declared on the preferred stock payable Sept. 1 to holders of record Aug. 15.

Wickwire Spencer Steel Co. reports for quarter ended June 30, net profit of $120,998 after depreciation, interest and other deductions, as compared with a net loss of $121,651 in the preceding quarter and $89,142 loss in June quarter last year.

Youngstown Sheet & Tube Co. and subsidiaries. Net profit after depreciation, income taxes and other charges, but before Federal tax on undistributed surplus, $2,588,089, for quarter ended June 30. Equal after 5½ per cent preferred stock dividend requirement to $1.98 a share on 1,200,000 common shares.

Chain Belt Co. has declared a dividend of 62½c. a share on capital stock, payable Aug. 15 to holders of record Aug. 1. A dividend of 50c. was paid in the previous quarter, and in the February quarter the disbursement was 30c.

U. S. Steel Votes $1 on Preferred

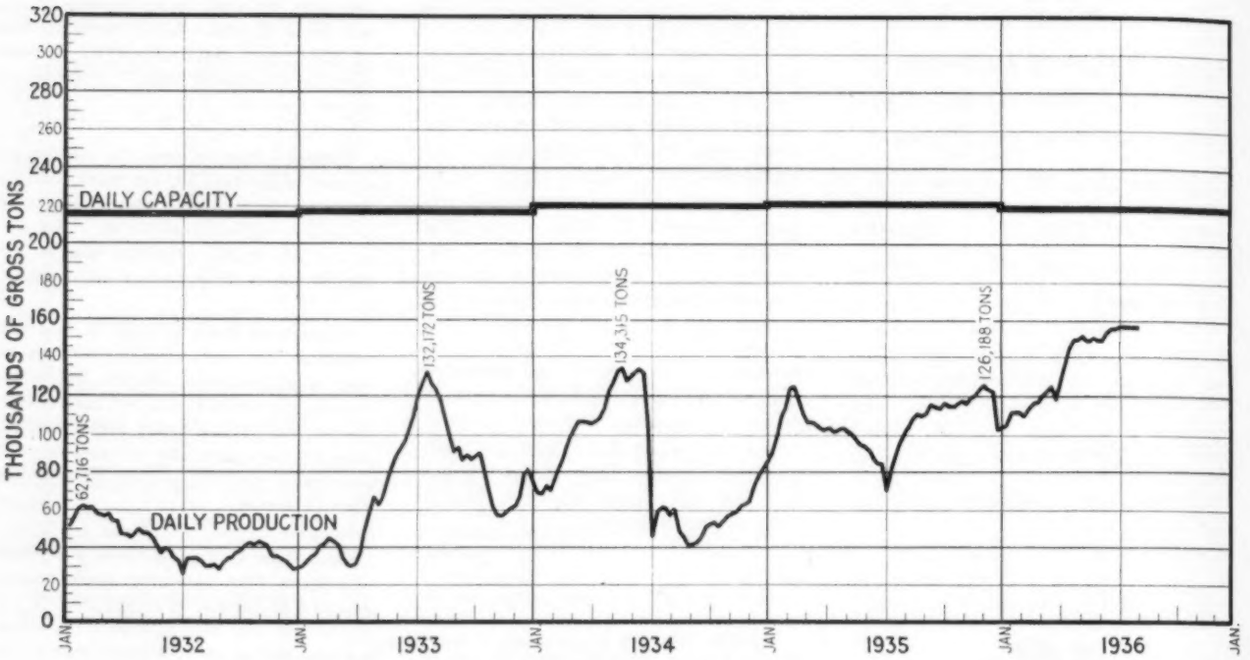
THE United States Steel Corp. on Tuesday announced a dividend of $1 per share on preferred stock for the quarter ended June 30, doubling the amount recentiy paid. Net income available for dividends was $12,862,423, compared with a deficit for the same period last year of $762,493. The surplus for the quarter was $9,259,612 and for the six months' period $10,834,511. The tax on undistributed profits cannot be determined until the annual figure is ascertained, since it must be based on the financial results for the full year.

Operations for the quarter were at the rate of 60.8 per cent of capacity and production and shipments reached the highest total of any quarter since that ended June 30, 1930. Shipments for the quarter totaled 2,850,069 tons, while those for the half-year period amounted to 5,031,350 tons.

STEEL INGOT PRODUCTION

Daily Tonnage of Bessemer and Open-Hearth Steel Ingots Produced by Weeks, 1932-1936

Current Week	Last Week	Weeks Ended Aug. 3, 1935	Aug. 4, 1934	Aug. 5, 1933	Aug. 6, 1932
156,923	155,825	101,836	57,249	123,505	32,439



Latest values plotted on the above chart are for the past week in each case.

STEEL INGOT PRODUCTION BY DISTRICTS: Per Cent of Capacity

District	Current Week	Last Week	Weeks Ended July 4, 1936	Aug. 3, 1935	Aug. 4, 1934
Pittsburgh	67.0	66.0	67.0	42.0	16.0
Chicago	72.5	70.0	72.0	52.0	31.0
Valleys	78.0	76.0	74.0	50.0	35.0
Philadelphia	53.0	53.0	48.0	28.0	21.0
Cleveland	77.0	75.0	79.0	45.0	22.0
Buffalo	79.0	90.0	90.0	38.0	30.0
Wheeling	96.0	96.0	96.0	75.0	27.0
Southern	54.0	54.0	57.0	30.0	9.0
Ohio River	82.0	80.0	63.5	55.0	33.0
Western	63.0	63.0	80.0	25.0	10.0
St. Louis	70.0	90.0	90.0	37.0	33.0
Detroit	100.0	100.0	100.0	95.0	76.0
Eastern	90.0	90.0	90.0	35.0	25.0
Aggregate	71.5	71.0	71.5	46.0	26.0
Average Year to Date	62.3	62.0	60.9	45.4	45.3

Weekly Booking of Construction Steel

From The Iron Age

	Week Ended July 28, 1936	July 21, 1936	June 30, 1936	July 30, 1935	Year to Date 1936	1935
Fabricated structural steel awards	16,655	20,515	36,815	4,250	651,405	446,145
Fabricated plate awards	4,245	12,710	1,640	3,800	156,865	106,090
Steel sheet piling awards	160	8,000	1,780	300	33,695	30,485
Reinforcing bar awards	9,930	8,515	23,350	1,525	217,240	133,500
Total Lettings of Construction Steel	30,990	49,740	63,585	9,875	1,059,205	716,220

. . . . SUMMARY OF THE WEEK. . . .

. . . Ingot production rises half point to 71½ per cent.

o o o

. . . July buying movement assures sustained output in August.

o o o

. . . Strong steel situation brings price rises in scrap.

STEEL buying has gathered sufficient fresh momentum to sustain production through August at approximately its present rate. This week's ingot output, estimated by THE IRON AGE at 71½ per cent, a half point higher than last week, may be the peak of midsummer production, but it does not now seem likely that the rate will fall much, if any, below 70 per cent during the next month. The outlook for the ensuing months is definitely promising regardless of politics.

The current buying movement, which shows no marked signs of subsiding, has placed a fairly large accumulation of orders on mill books on top of the heavy June backlogs, not all of which have been shipped. Some bar mills have larger bookings than they had a month ago. Delivery promises on sheets range from four to six weeks, according to grade, and consumers continue to press for shipments.

INGOT production has gained one point at Pittsburgh, where it is 67 per cent; two points to 77 per cent in the Cleveland-Lorain district; two points to 78 per cent in the Valleys, and two points to 82 per cent in the Ohio River district. Even at Chicago, where drought conditions have caused some hesitation among agricultural implement manufacturers and others catering to the farm market, the ingot rate has advanced 2½ points to 72½ per cent.

While the effects of the drought have not been fully measured business-wise, fears have lessened and some canceled steel orders have been reinstated. It is now apparent that vegetable and fruit crops have not suffered materially and hence tin plate consumption will be only slightly reduced, and this is more than offset by increased use for beer cans.

Accompanying the strong steel situation is a general mark-up of scrap prices, with heavy melting steel 50c. a ton higher at Pittsburgh and Chicago, and 25c. higher at Philadelphia, resulting in an advance in THE IRON AGE scrap composite to $13.67 compared with $13.25 last week. The high point this year was $14.75 early in March, and last year's peak was $13.42.

AUTOMOBILE production, which was adversely affected by hot weather, has turned upward again, and last week was only a little below 100,000 units. Initial steel orders for 1937 models are appearing, while at the same time heavy shipments are going forward for runs on 1936 cars. The peak of buying for new models probably will be reached in late August.

Railroad equipment buying is one of the most promising prospects to sustain fall steel business. If carloadings, recently around 700,000 cars a week, should rise toward their usual October peak, a shortage of cars might be experienced that would hasten new purchases and rebuilding. The surplus freight cars recently numbered only 191,000 against 631,000 in 1931. New motive power may also be needed. This week's railroad orders include 3000 tank cars for the Union Tank Car Co. and 1000 cars for the Norfolk & Western. The Soo Line has bought 3000 tons of rails, the Seaboard Air Line is inquiring for 6280 tons and the Nickel Plate for 5000 tons.

A GOOD deal of construction work is still in prospect, though actual inquiries for fabricated structural steel this week total less than 21,000 tons with lettings at about 16,650 tons. A number of small bridges in the South call for nearly 10,000 tons of shapes.

In the pipe trade there is considerable interest in several projected gasoline-carrying lines.

THE IRON AGE index of capital goods activity has advanced to 85.5 per cent of the 1925-27 average, the highest rate attained since August, 1930.

Finished steel and pig iron composite prices are unchanged at 2,159c. a lb. for the former and $18.84 for the latter. No immediate change in prices of these products is expected, but consideration is being given by some producers to higher prices for the fourth quarter.

. . . PITTSBURGH . . .

. . . Ingot output one point higher at 67 per cent.

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. . . Some mills have larger backlogs than a month ago.

o o o

. . . Strong scrap market with $15 paid for heavy melting steel.

PITTSBURGH, July 28.—Steel ingot production in the Pittsburgh district is up one point this week to about 67 per cent of capacity. Operations would be heavier were it not that much of the idle equipment is not serviceable, requiring extensive repairs and replacements. The Wheeling district continues to operate at 96 per cent of capacity.

Buying of steel products since the first of the month has been much larger than expected and some mills find themselves with larger backlogs than 30 days ago. Consumption of steel in general has not increased and it has decreased somewhat in the automobile industry, though much less than was expected by this date. Small orders for 1937 models to try out dies have been numerous, while orders is real tonnages are expected within two or three weeks, involving a particularly quick change to the new models.

Unexpectedly heavy buying at the present time is attributed to the fact that mills in several lines have fallen behind in deliveries, influencing various buyers to carry some stocks for their own protection, a policy not seen for four years or more past. These stocks will not be liquidated unless fresh supplies become scant. The stocking is no longer associated with fears of labor troubles in the steel industry, which seemed never more than a remote possibility and are now seen to be even less likely than a few weeks ago.

Tin plate mills are running at about 85 per cent of regular time, down five points from last week. Specifications have decreased somewhat because the drought may curtail some of the vegetable packs.

The strong undertone in heavy melting steel scrap for delivery in the Pittsburgh district has developed into an advance of 50c., mills paying $15 and securing little material at that.

Semi-Finished Steel

Shipments have been in fair volume, closely approximating the tonnage of early in the month. Only a moderate amount of old and low-priced tonnage remains to be moved and there would be less now had not the detached finishing mills had some urgent requirements. Consumption of sheet bars by tin plate mills is off, from the double influence of reduced running time and lighter outputs per turn, due to hot weather. Strip and sheet mills are running as well as formerly.

Bolts, Nuts and Rivets

Demand has been somewhat lighter still in the last week, except that demand by freight car shops and fabricators holds up fully. Increased demand by the automobile industry is not expected for three or four weeks.

Bars

Mills have larger backlogs in shipping orders than they had 30 days ago. New buying, at the advanced price, has been such that no little of the old tonnage remains to be shipped. Bar production is at far below conventional rated capacity, but producers do not care to put in idle equipment on account of the repair expense and the time that would be involved.

Cold-Finished Bars

Makers expect to have virtually all of their old and lower priced business executed by the end of the month. New buying has been distinctly light, but buying by automobile and parts makers against 1937 models is expected to begin soon and a forecast is made that August shipments will not fall far short of those of this month.

Steel Sheet Piling

Lettings in the past week have not been important, but mills have quite a fair volume of orders on books.

Reinforcing Steel

Shipments are fairly heavy on orders accumulated in the last few months. No particularly important business has been placed in the week. A forecast is made that total tonnage this year will run about one-half greater than that of 1935.

Shapes and Plates

Deliveries of plates for freight car building and repairing are fully sustained and seem likely to be continued indefinitely. Lettings of fabricated jobs reported this week were relatively light. Prices are rigidly maintained at the advance of $2 a ton, effective July 1.

Tubular Products

Distribution of standard pipe by jobbers in June showed an increase over May, making the month the heaviest in several years, while present indications are that July will make a still better showing. Irregularities in the secondary market have been decreasing week by week and are now confined almost wholly to the New York area, where shading has been chronic. Demand for oil country goods is off a trifle from a month ago but is doing better than last year's average. Not much line pipe inquiry is out, but the year to date has shown more activity than any year since 1931. Various gasoline lines are under consideration. Merchant boiler tubes are in good request, with a generally improving trend, while locomotive tubes remain stagnant. Mechanical tubing is moving well, with no material change in the last 30 to 60 days.

Tin Plate

Not much damage to vegetable crops by reason of the drought has been reported so far, the influence being spotty, but it is considered

A Comparison of Prices

Market Prices at Date, and One Week, One Month, and One Year Previous; Advances Over Past Week in Heavy Type, Declines in Italics

Rails and Semi-finished Steel

Per Gross Ton:	July 28, 1936	July 21, 1936	June 30, 1936	July 30, 1935
Rails, heavy, at mill	$36.37½	$36.37½	$36.37½	$36.37½
Light rails, Pittsburgh	35.00	35.00	35.00	35.00
Rerolling billets, Pittsburgh	30.00	30.00	28.00	27.00
Sheet bars, Pittsburgh	30.00	30.00	28.00	28.00
Slabs, Pittsburgh	30.00	30.00	28.00	27.00
Forging billets, Pittsburgh	37.00	37.00	35.00	32.00
Wire rods, Nos. 4 and 5, P'gh	38.00	38.00	38.00	38.00
	Cents	Cents	Cents	Cents
Skelp, grvd. steel, P'gh, lb.	1.80	1.80	1.80	1.70

Finished Steel

Per Lb.:	Cents	Cents	Cents	Cents
Bars, Pittsburgh	1.95	1.95	1.85	1.80
Bars, Chicago	2.00	2.00	1.90	1.85
Bars, Cleveland	2.00	2.00	1.90	1.85
Bars, New York	2.30	2.30	2.20	2.15
Plates, Pittsburgh	1.90	1.90	1.80	1.80
Plates, Chicago	1.95	1.95	1.85	1.85
Plates, New York	2.19	2.19	2.09	2.09
Structural shapes, Pittsburgh	1.90	1.90	1.80	1.80
Structural shapes, Chicago	1.95	1.95	1.85	1.85
Structural shapes, New York	2.16¼	2.16¼	2.06¼	2.06¼
Cold-finished bars, Pittsburgh	2.25	2.25	2.10	1.95
Hot-rolled strips, Pittsburgh	1.95	1.95	1.95	1.85
Cold-rolled strips, Pittsburgh	2.60	2.60	2.60	2.60
Hot-rolled annealed sheets, No. 24, Pittsburgh	2.50	2.50	2.50	2.40
Hot-rolled annealed sheets, No. 24, Gary	2.60	2.60	2.60	2.50
Sheets, galv., No. 24, P'gh	3.20	3.20	3.20	3.10
Sheets, galv., No. 24, Gary	3.30	3.30	3.30	3.20
Hot-rolled sheets, No. 10, Pittsburgh	1.95	1.95	1.95	1.85
Hot-rolled sheets, No. 10, Gary	2.05	2.05	2.05	1.95
Cold-rolled sheets, No. 24, Pittsburgh	3.05	3.05	3.05	2.95
Cold-rolled sheets, No. 24, Gary	3.15	3.15	3.15	3.05
Wire nails, Pittsburgh	2.10	2.10	2.10	2.60
Wire nails, Chicago dist. mill	2.15	2.15	2.15	2.65
Plain wire, Pittsburgh	2.40	2.40	2.40	2.30
Plain wire, Chicago dist. mill	2.45	2.45	2.45	2.35
Barbed wire, galv., Pittsburgh	2.60	2.60	2.60	3.00
Barbed wire, galv., Chicago dist. mill	2.65	2.65	2.65	3.05
Tin plate, 100 lb. box, P'gh	$5.25	$5.25	$5.25	$5.25

Pig Iron

Per Gross Ton:	July 28, 1936	July 21, 1936	June 30, 1936	July 30, 1935
No. 2 fdy., Philadelphia	$21.3132	$21.3132	$21.3132	$20.3132
No. 2, Valley furnace	19.50	19.50	19.50	18.50
No. 2, Southern Cin'ti	20.2007	20.2007	20.2007	19.2007
No. 2, Birmingham†	15.50	15.50	15.50	14.50
No. 2, foundry, Chicago*	19.50	19.50	19.50	18.50
Basic, del'd eastern Pa.	20.8132	20.8132	20.8132	19.8132
Basic, Valley furnace	19.00	19.00	19.00	18.00
Malleable, Chicago*	19.50	19.50	19.50	18.50
Malleable, Valley	19.50	19.50	19.50	18.50
L. S. charcoal, Chicago	25.2528	25.2528	25.2528	24.2528
Ferromanganese, seab'd carlots	75.00	75.00	75.00	85.00

†This quotation is for delivery in South; in the North prices are 38c. a ton under delivery quotations from nearest Northern furnace.

*The switching charge for delivery to foundries in the Chicago district is 60c. per ton.

Scrap

Per Gross Ton:				
Heavy melting steel, P'gh	**$14.75**	$14.25	$13.62½	$12.75
Heavy melting steel, Phila.	**12.50**	12.25	12.00	10.75
Heavy melting steel, Ch'go	**13.75**	13.25	13.25	11.25
Carwheels, Chicago	**14.00**	13.50	13.50	11.75
Carwheels, Philadelphia	14.25	14.25	13.75	11.25
No. 1 cast, Pittsburgh	14.75	14.75	14.75	13.50
No. 1 cast, Philadelphia	14.25	14.25	14.00	11.25
No. 1 cast, Ch'go (net ton)	**12.50**	12.00	12.00	10.00
No. 1 RR. wrot., Phila.	14.75	14.75	14.75	10.25
No. 1 RR. wrot., Ch'go (net)	**12.50**	11.50	11.50	9.00

Coke, Connellsville

Per Net Ton at Oven:				
Furnace coke, prompt	$3.50	$3.50	$3.65	$3.25
Foundry coke, prompt	4.00	4.00	4.25	3.40

Metals

Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Electrolytic copper, Conn.	9.75	9.75	9.50	7.75
Lake copper, New York	9.87½	9.87½	9.62½	8.12½
Tin (Straits), New York	*42.00*	43.75	41.00	52.70
Zinc, East St. Louis	4.80	4.80	4.85	4.40
Zinc, New York	5.17½	5.17½	5.22½	4.77½
Lead, St. Louis	4.45	4.45	4.45	4.00
Lead, New York	4.60	4.60	4.60	4.15
Antimony (Asiatic), N. Y.	13.00	13.00	13.00	12.75

On export business there are frequent variations from the above prices. Also in domestic business, there is at times a range of prices on various products, as shown in our detail price tables.

The Iron Age Composite Prices

	Finished Steel	Pig Iron	Steel Scrap
July 28, 1936	2.159c. a Lb.	$18.84 a Gross Ton	$13.67 a Gross Ton
One week ago	2.159c.	18.84	13.25
One month ago	2.122c.	18.84	12.96
One year ago	2.124c.	17.84	11.58
	Based on steel bars, beams, tank plates, wire rails, black pipe, sheets and hot-rolled strips. These products represent 85 per cent of the United States output.	Based on average of basic iron at Valley furnace and foundry irons at Chicago, Philadelphia, Buffalo, Valley and Birmingham.	Based on No. 1 heavy melting steel quotations at Pittsburgh, Philadelphia and Chicago.

	Finished Steel		Pig Iron		Steel Scrap	
	High	Low	High	Low	High	Low
1936	2.159c. July 7	2.084c., Mar. 10	$18.84, Jan. 7	$18.84, Jan. 7	$14.75, Feb. 26	$12.67, June 9
1935	2.130c., Oct. 1	2.124c., Jan. 8	18.84, Nov. 5	17.83, May 14	13.42, Dec. 10	10.33, April 23
1934	2.199c., April 24	2.008c., Jan. 2	17.90, May 1	16.90, Jan. 27	13.00, Mar. 13	9.50, Sept. 25
1933	2.015c., Oct. 3	1.867c., April 18	16.90, Dec. 5	13.56, Jan. 3	12.25, Aug. 8	6.75, Jan. 3
1932	1.977c., Oct. 4	1.926c., Feb. 2	14.81, Jan. 5	13.56, Dec. 6	8.50, Jan. 12	6.43, July 5
1931	2.037c., Jan. 13	1.945c., Dec. 29	15.90, Jan. 6	14.79, Dec. 15	11.33, Jan. 6	8.50, Dec. 29
1930	2.273c., Jan. 7	2.018c., Dec. 9	18.21, Jan. 7	15.90, Dec. 16	15.00, Feb. 18	11.25, Dec. 9
1929	2.317c., April 2	2.273c., Oct. 29	18.71, May 14	18.21, Dec. 17	17.58, Jan. 29	14.08, Dec. 3
1928	2.286c., Dec. 11	2.217c., July 17	18.59, Nov. 27	17.04, July 24	16.50, Dec. 31	13.08, July 2
1927	2.402c., Jan. 4	2.212c., Nov. 1	19.71, Jan. 4	17.54, Nov. 1	15.25, Jan. 11	13.08, Nov. 22

altogether probable that total packs of several of the vegetables will be curtailed. Tin plate for packers' cans is being specified quite conservatively. Demand for milk cans is curtailed. Fruits are not affected, while demand for general line cans is fully sustained at a rate above that of a year ago. A forecast was made early in the year that tin plate for beer would run about 3,000,000 boxes, and the disposition now is to raise the estimate, particularly as two large and conservative brewing interests have announced intentions to push the sale of canned beer. Mills are running at about 85 per cent, five points lower than last week.

Wire Products

Merchant wire products are in quite fair demand for the time of year, between the regular seasons for distribution in agricultural areas. While the drought may affect demand somewhat in the coming season, it is pointed out that the last season was curtailed by the severe winter, leaving some postponed requirements. In the secondary market, conditions have been improving, irregularities being few in New Orleans, Memphis and Chicago territory. Irregularities continue in the New York area. Demand for manufacturing wire is fully sustained, with prices rigid.

Sheets

Demand by the automobile industry has grown light, but there are still fair-sized shipments against 1936 models. The switch to 1937 models is expected to occur with unusual celerity. Orders for experimental runs with new dies have been numerous but have not run into tonnage, while substantial orders are expected by about the middle of next month, to accumulate banks of sheets and parts. Miscellaneous demand is well sustained. Mills are operating this week at 65 to 70 per cent of regular running time, but tonnage output is not in proportion, on account of hot weather. Prices are rigidly maintained with occasional exceptions in the case of galvanized sheets. The idea of setting up quantity differentials for galvanized sheets appears to have been abandoned at least for the present.

Strip Steel

Hot strip mills are running at about 60 per cent of the total rated capacity, as formerly, but are considerably behind in shipments, because most of the idle capacity would involve much expense getting it into operative condition. A notable feature of the situation is that shipments are farther behind in cold-rolled strip, which was not advanced July 1, than on hot-rolled strip, which was advanced $2 a ton. While customers are pressing for deliveries, it does not appear that any are incommoded, the desire being simply to build up a little reserve stock. Buying by the automobile trade has been relatively light, but some orders are believed to be for 1937 models. Other demand is almost as heavy as a month ago, despite the price advance in hot-rolled strip meanwhile.

Coal and Coke

The larger coal producers in the Pittsburgh district, with Lake outlets, have been running almost full since the first of the month, when the freight surcharge on Lake coal shipments was reduced from 15 to 10c., some business having been held back to await the change. Shipments are swelled just now by the need of rapid movement at docks, to equalize demurrages accumulated early in the season, the regular adjustment being made as of July 31. Both by-product and beehive coke are relatively scarce and few, if any, additional blast furnaces could be put in without extensive repairs to coke making equipment. Buying of domestic coke has reached fair proportions, some dealers stocking in anticipation of a scarcity. Prices are quite firm, irregularities having disappeared recently.

. . . Steel plant operations steady.

o o o

. . . Pig iron business in fair volume.

BUFFALO, July 28.—Operations of Buffalo open-hearths are slightly below last week. The figures: Lackawanna plant of Bethlehem Steel Company, 22; Republic Steel Corp., 7; Wickwire-Spencer Steel Corp., 1.

A steel fabricator with a local warehouse will supply 1400 tons of reinforcing steel for the Kenfield job, a Federal housing project. A Buffalo fabricator of structural steel will supply 270 tons for the same project. A Tonawanda concern obtained the contract for 700 to 800 tons of re-rolled material for a section of the Buffalo sewer project.

Pig iron shipments are fair and new business the same. Most of the buyers of sizable tonnage are covered for their immediate requirements. General foundry operation is good, with the radiation industry business keeping up particularly.

. . . Pig iron sales mostly in car lots.

o o o

. . . New England steel mills busy.

BOSTON, July 28.—Pig iron sales the past week were confined largely to scattered carlots, mostly for mixture purposes and for prompt delivery. The New England melt is holding up well. Bridgeport, Conn., and Worcester, Mass., steel plants are comfortably busy with no immediate outlook of a slowing down as was anticipated a month or so ago.

Arrangements for overtime compensation announced by the United States Steel Corp. will have no effect on its Worcester, Mass., subsidiary, or on the Mystic Iron Works. State laws and old customs prohibit men working more than six consecutive turns without a 24-hr. intermission; consequently there is little, if any, overtime. If, in the past, overtime was necessary, time and a half was always paid.

Some recent business in 6- and 8-in. cast iron pipe was done on a basis of around $47 a ton, contrasted with a normal market of around $48. Such reductions, however, are rare. Steel fabricating shops in most cases are well booked up, which is in direct contrast with a year ago.

. . . . CHICAGO . . . .

. . . Ingot output 2½ points higher.

o o o

. . . No marked recession expected in August.

o o o

. . . Scrap market moving to higher price levels.

CHICAGO, July 28. — Ingot output has reached 72½ per cent of capacity, a gain of 2½ points. Strive as they will, steel makers cannot complete low priced commitments by the end of the month and a large carryover will extend into August. The responsibility for this condition does not necessarily rest with producers, who did not foresee continuation of a high summer demand which has kept many units at capacity output and thereby eliminated the possibility of clearing the bulk of second quarter purchases within 30 days.

Current specifications and new buying of finished steel are dropping back slowly, but the significant point is that they are very closely in balance, which leads sellers to the conclusion that the August recession will not be of major proportion and they do not worry about September, believing it will take care of itself.

Railroad equipment continues to reach the market and a satisfying flow of steel orders is resulting. The Union Tank Car Co. has placed 3000 tank cars, and other smaller business is tending to swell car plant books. Farm implement manufacturers are moving with extreme caution, but they appear to have passed the valley of their drought fears, and threats of cancellation of steel orders have been withdrawn. Public building projects are numerous and they foretell excellent operations in fabricating shops. Reinforcing bar benders are at capacity output with books that assure August as one of the best months of the year.

The scrap market is awakening and prices in general are moving to higher levels.

Pig Iron

July shipments will show a drop of only 5 per cent below the total in June. Melters view the price situation as one which will not weaken and they are keeping an ear to the ground for a possible upward revision. In the meantime, buying remains on an immediate need basis. Railroad equipment and heating and ventilating units are busier. Agricultural implement manufacturers are going slowly, but automobile foundries are on the edge of starting 1937 model castings.

Coke

Prices for deliveries in August will be the same as those which have prevailed in July. Shipments are off rather sharply, but the gain early in the month represented redistribution necessitated by labor difficulties in neighboring districts. Actual use in this area reflects the excellent condition of foundry books.

Rails

The Soo Line (Minneapolis, St. Paul & Sault Ste. Marie) has placed 3000 tons of rails, 1400 tons of which was taken by Carnegie-Illinois and the remainder was divided between Bethlehem and Inland. The general run of accessory orders is small, but the aggregate of all such business taken within the last week totals 1500 tons. Activity in light rails is confined to miscellaneous small lots. There appears to be no flurry concerning a possibe rail price change at the end of next month. In fact, the impression is widespread that no change will take place.

Structural Material

New awards total over 8000 tons, including 1000 tons for a crusher plant in Colorado. All other lettings of size represent expenditure of public money. Fresh inquiries total 13,000 tons. There is a long list of highway bridges and if one or two states are omitted one week they are certain to show up the next week. Only three more days remain in which to work through specified projects on which second quarter prices prevail. Mills, already well crowded for deliveries, expect the rush to increase with a peak some time late in August.

Cold-Rolled Strip

Orders are tapering, but the rate is not alarming. Production remains near capacity and deliveries range from four to five weeks on many specifications.

Sheets

Demand from automobile plants is at the crossroads between needs for current models and those for 1937 models. Sheets are now moving for both new and old models and this type of demand is expected to prevail throughout most, if not all, of August, near the end of which real schedules will be expected. Several railroads and some agricultural implement manufacturers are holding up orders on account of the drought. Miscellaneous manufacturers are still giving good accounts of themselves.

Wire Products

Sellers are still at a loss to measure drought losses. Reports indicate that the condition is rather spotty, some areas having been relieved by rains which are aiding late plantings. In some sections dealers are downhearted, while in other areas they look for Government drought relief to keep their markets well above the zero level. The manufacturing trade remains active, and demand for welding wire, especially for use on new pipe lines, is strong. All told, new orders have dropped below shipments, which are level with mill operations at 60 to 65 per cent of capacity.

Plates

Outstanding in this market is an order for 3000 tank cars placed in the East by the Union Tank Car Co. New inquiries are limited to seven tank cars by Wilson & Co., Chicago. Plate sales total over 8000 tons, of which 1000 tons is for railroad equipment. Much of this tonnage will pass through structural shops.

Bars

Demand is slipping, but the change rests with the larger consumers. Automobile manufacturers are assembling largely from stock parts and are taking less new steel for current models. Their needs for 1937 models are very light thus

far. Trade winds in the agricultural implement field are blowing first hot and then cold, depending upon reports from drought-stricken areas. For a time last week some manufacturers were about ready to cancel steel orders, but they later decided to ride through, partly on the hope that Government aid will keep the market from falling apart where crops are a total failure. There still is insistent pressure for bar deliveries, which are not better than three weeks. Tonnages taken at the old prices are such that shipments against them will extend well into August.

Cast Iron Pipe

Awards are rather scarce and fresh inquiries are suffering a summer lull. There is hope among sellers that late summer and early fall will bring revival of WPA work. All foundries have been working ahead and stocks are complete both as to tonnages and diameters. Prices for cast iron pipe are steady.

Reinforcing Bars

A number of the larger projects which have been hanging fire throughout most of the summer are being closed. A department store in Chicago is taking 600 tons and a large lot of bars is pending at the Hiram Walker plant at Peoria, Ill. All shops are rushed to the limit with plenty of work ahead to assure excellent operations through August. Prices are steady on all but the largest projects.

REINFORCING STEEL

. . . Awards of 9930 tons —5265 tons in new projects.

AWARDS

New York, 1000 tons, West Side elevated highway, 111th to 121st Streets, to Carroll-McCreary Co., Inc., through James Stewart & Co., Inc.

New York, 100 tons, bar trusses for repairs to Queensboro bridge, to Concrete Steel Co.

Bergen County, N. J., 106 tons, highway work, to Igoe Brothers.

Burlington County, N. J., 600 tons, highway work, to Taylor-Davis, Inc.

Hightstown, N. J., 140 tons, crossing elimination, to Bethlehem Steel Co.

Buffalo, 1400 tons, Kenfield Federal housing project, to Truscon Steel Co.

Buffalo, 800 tons, PWA sewer project, to Buffalo Steel Co., Tonawanda, N. Y.

Chicago, 600 tons, Wieboldt store, to Concrete Engineering Co.

Chicago, 250 tons, flow control on Chicago River, to an unnamed bidder.

Chicago, 950 tons, Trumbull housing project, to Calumet Steel Co.

Chicago, 400 tons, sanitary district works, to Concrete Steel Co.

Lynxville, Wis., 385 tons, dam across Mississippi River, to Paper-Calmenson Co.

State of Illinois, 230 tons, bridges, to Calumet Steel Co.

Clarksville, Mo., 375 tons, dam across Mississippi River, to Inland Steel Co.

Denver, 1800 tons, conduit No. 16 for city, to Lock Joint Pipe Co.

Evanston, Wyo., 127 tons, State underpass, to an unnamed bidder.

Los Angeles, 150 tons, classroom building at Santa Monica Boulevard school, to Security Materials Co.

Los Angeles, 100 tons, alterations at Vine Street school, to Security Materials Co.

Bell, Cal., 100 tons, high school alterations, to Blue Diamond Corp.

San Francisco, 120 tons, Alemany Boulevard sewer extension, to Soule Steel Co.

San Francisco, 200 tons, foundations at State livestock building, to Bethlehem Steel Co.

NEW REINFORCING BAR PROJECTS

Pittsfield, Mass., 125 tons, dam.

New York, 280 tons, Procurement Division of Treasury Department; W. Ames & Co., low bidders.

New York, 200 tons, repairs on Queensboro bridge; Truscon Steel Co., low bidder.

Brooklyn, 2500 tons, Ten Eyck housing project, Williamsburgh section; bids Aug. 4.

Jersey City, 150 tons, stadium; Capitol Steel Corp., low bidder.

Chicago, 800 tons, approach to Randolph Street viaduct.

State of Colorado, 144 tons, State highway bridges in three counties; bids Aug. 3.

Placentia, Cal., 100 tons, Bradford Avenue school; bids opened.

Van Nuys, Cal., 100 tons, auditorium at Sylvan Street school; bids opened.

Los Angeles, 200 tons, addition at Hoover Street school; bids opened.

Los Angeles, 100 tons, store at Wilshire and Cerrano Streets; bids opened.

Los Angeles, 150 tons, retaining wall on Aliso and Lyon Streets; bids Aug. 5.

Palms, Cal., 100 tons, high school auditorium; bids opened.

Ashton, Idaho, 316 tons, Grassy Lake dam; bids Aug. 7.

Buckeye Laboratories, Inc., Alliance, Ohio, has been taken over by the Alliance Machine Co., same city. The company manufactures high quality oils, including lubricating, electric and cable oils under patented process. In the reorganization W. H. Purcell has been made president and R. J. Harry general manager, both occupying similar positions with the Alliance Machine Co. R. P. Dunmire, who has been vice-president and chief engineer of the company, remains with the new organization in similar capacities.

RAILROAD BUYING

Norfolk & Western has ordered 800 box cars from Ralston Steel Car Co., 100 automobile cars with loading devices from Magor Car Corp., and 100 cars from Greenville Steel Car Co.

Newfoundland Railway has ordered 50 steel underframe, 42-in. gage box cars from Koppel Industrial Car & Equipment Co.

Wilson & Co., Chicago, are inquiring for seven special tank cars of 7000 gal. capacity.

Union Tank Car Co. has placed 3000 tank cars with American Car & Foundry Co.

RAILS AND TRACK SUPPLIES

Boston & Maine has purchased 2100 tons of 112-lb. and 800 tons of 107-lb. rails from Bethlehem Steel Co.

Portland Terminal has purchased 980 tons of 112-lb. rails from Bethlehem Steel Co.

Soo Line has distributed 3000 tons of rails among Carnegie-Illinois Steel Corp., Bethlehem Steel Co. and Inland Steel Co.

New York, Chicago & St. Louis will shortly purchase 5000 tons of rails.

Seaboard Air Line is inquiring for 6280 tons of 100-lb. rail.

Building New Large Turbine Generators

TWO 60,000 kw. hydrogen-cooled turbine generators and one 75,000 kw. turbine generator are now under construction in the immense turbine shops of the General Electric Co. at Schenectady.

The 60,000 kw. units are for the Windsor station of the Ohio Power Co., and the West Penn Electric Co., at Beach Bottom, W. Va. It is said that the turbines will be the largest high-pressure, non-condensing, high-temperature machines yet built, and that the generators will be the largest to operate at 3600 r.p.m., as well as the largest to be hydrogen-cooled. The machines are designed for 1250 lb. gage pressure, 925 deg. F. total temperature, and 235 lb. gage back pressure. They will be superimposed on existing equipment and are expected to be in service late in 1938.

The 75,000 kw. turbine generator is for the Cahokia station of the Union Electric Light & Power Co. of Illinois, at St. Louis. This unit, said to be the largest to have been ordered by any utility in recent years, will operate at 315 lb. pressure, 725 deg. F and 1 in. absolute back pressure.

. . . CLEVELAND . . .

. . . Ingot production up to 77 per cent.

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. . . Finishing mills continue to operate at near capacity.

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. . . Approximately present rate of activity for August assured.

CLEVELAND, July 28.—Ingot output in the Cleveland-Lorain district advanced two points this week to 77 per cent of capacity, another open-hearth being put on at the Lorain plant, which now is operating all of its 12 furnaces. Finishing mills continue to operate at near capacity.

While steel covered by second quarter contracts has about all been shipped, sufficient new tonnage has come out this month to assure good operations through the greater part of August and some producers are filled up for all of next month on the same product.

Tonnage booked by Cleveland sales offices in July will show only a small decline from June, when there was a rush of orders because of the advance in prices for the third quarter. Much of the steel that is being shipped is going into immediate consumption and mills are being crowded for deliveries, this being particularly true of bars, sheets, strip steel and structural shapes. Some producers report that orders are for smaller tonnages than earlier in the month, but buyers want quick shipment.

Mills have some good-sized orders for sheets and strip steel from the motor car manufacturers that were placed earlier in the month. However, little new tonnage came from that source the past week. Demand from agricultural implement manufacturers is experiencing a seasonal slackening. However, there is little evidence of a seasonal slowing down in other industries. Steam shovel manufacturers are very busy making small shovels which are in heavy demand.

Orders for structural shapes and plates for identified projects are heavy as the period for which protection was granted draws near an end. It is stated that no extension will be allowed beyond July 31 on these protections. Rerolling billets are not very active and little tonnage has been taken at the new price. Pipe is in very good demand from the oil country and from jobbers whose pipe business has been stimulated by the increased activity in building. Although no additional rail tonnage had been expected in this territory this year, the Nickel Plate road will purchase 5000 tons of rails shortly.

The scrap market is very firm, with a price advance of 25c. a ton on steel-making grades.

Pig Iron

Shipments are still holding up better than had been expected and will show only very slight falling off in July as compared with June. Specifications are light from the motor car industry and have tapered off somewhat from the agricultural implement foundries, but this loss has been offset by increased demand from manufacturers of heating equipment, foundries making railroad equipment and miscellaneous consumers. There is a seasonal increase in activity among manufacturers of furnaces and other heating equipment. The Interlake Iron Corp. will start up its second blast furnace in Toledo early in August. This furnace has been off for relining.

Iron Ore

Receipts of Lake Superior ore at Lake Erie ports during June were 4,691,766 tons, a gain of 1,690,031 tons over the same period last year. Receipts for the season were 7,732,617 tons, compared with 5,328,797 tons during the same period last year. Shipments from these docks during June were 3,503,702 tons and for the season until June 1 were 6,331,492 tons, against 4,342,546 tons during the same period a year ago. The dock balance July 1 was 4,045,110 tons, compared with 4,160,873 tons on the same date a year ago.

Bars, Plates and Shapes

Bars continue to move quite well to miscellaneous consumers. Orders from the motor car industry are light and business from the agricultural implement manufacturers has tapered off. Some of the forge shops that have bar tonnage under contract are withholding specifications until they secure releases from motor car manufacturers and know the sizes they will require. An inquiry is out for a post office and court house in Cincinnati requiring 4000 tons of structural shapes. Bids are being taken this week for four highway bridge projects in Ohio requiring 730 tons. Small lots of structural shapes for private work are in good demand. Reinforcing bars are quiet.

Strip Steel

Demand for strip is holding up well. Mills have fair backlogs and are being crowded for deliveries. Some are four to six weeks behind on shipment of cold strip and are filled up for four weeks in orders on hot strip. The local cold strip mill is operating at capacity this week.

Bolts, Nuts and Rivets

Small bolts are in good demand, but there is not much call for large bolts. New business in bolts and nuts has decreased about 15 per cent from June. Shipments to the motor car industry continue fair, but little new business is coming from that source. The industry is operating at about 60 per cent of capacity. Following recent good rivet specifications from car shops, demand for rivets has slackened. Makers are still accepting orders at the old prices against inquiries that came out in June, but on Aug. 1 will discontinue ac-

cepting any business except at the $3 a ton advance. Some small-lot sales have been made at the new price.

Sheets

New demand is fair, although not as heavy as during the previous two or three weeks. Consumers are crowding the mills for shipment. New tonnage from the motor car industry was rather limited the past week, but mills have considerable business on their books taken from that source during the previous two weeks. Some of the sheet tonnage ordered is for new models. Seasonal slowing down is in evidence in some refrigerator plants. Demand for galvanized sheets continues heavy and some makers are unable to promise shipments inside of six weeks.

. . BIRMINGHAM . .

. . . Operations higher as new orders flow in.

o o o

. . . Southern mills have good-sized backlogs.

o o o

. . . Farm market brighter because of rains.

BIRMINGHAM, July 28. — Local steel mills are hard pressed to make prompt deliveries on current orders for plates, bars, shapes and sheets. There has been a steady inflow lately of new business and shipments are running behind. Mill stocks will be further decreased this month. Unfilled tonnage on hand would run the mills steadily for some weeks without further bookings. New business continues to develop at a satisfactory rate. The outlook for fall business from the farm market is very good, whereas a month ago the outlook was doubtful. Recent rains have changed the situation and the steel producers are looking for good business.

Last week the Tennessee Coal, Iron & Railroad Company increased steel production at its Fairfield open-hearth plant, adding a sixth unit. Thirteen open-hearth units are now producing, six at Fairfield, three at Ensley and four at Gadsden. The preceding week there were 12. Operating schedules for the current week call for 13.

The pig iron market is still dragging. Buying is largely on a spot basis. July shipments will be larger than those of June. Furnace operations are unchanged with 10 stacks active.

It is likely that the Ensley rail mill will reopen sometime in August for a short run on a limited amount of rail tonnage. There is no prospect of a long run at this time.

The pipe market is dull, as PWA demand has subsided. July shipments will be about the same as those of June, which were under those of May. McWane Cast Iron Pipe Co. is furnishing 100 tons of small diameter pipe for the Nettleton, Miss., water works.

Virginia Bridge Co. will furnish 4000 tons of structural steel for the new Charleston, S. C., plant of the West Virginia Paper Co., half of it to be fabricated in Birmingham and half at the Roanoke plant. Tennessee Valley Authority has awarded a contract for the lock gates at Guntersville Dam to Virginia Bridge Co. at $53,000, these to be fabricated at Roanoke plant and to require 400 tons of steel. Other orders for the Birmingham plant are: 200 tons for Southern Railway bridge in Virginia and 700 tons for Tubize Chatillon Corp. rayon plant at Rome, Ga.

Nashville Bridge Co. is furnishing 200 tons of structural steel for a state highway overpass in the Birmingham district and 100 tons for a bridge at Delhi, La. Southern Steel Works is completing shipment of steel for plant of U. S. Gypsum Co. at Sweetwater, Tex.

Chicago Bridge & Iron Works, Birmingham, has made the following shipments recently: 85-ton wood-treating cylinder for plant of American Lumber & Treating Co., Wauna, Ore.; bubble tower for refinery at Palembang, Sumatra; three 51,000-bbl. tanks for Suez Canal port; 500,000-gal. elevated tank for Decatur, Ga., water works.

The cotton tie market is opening up and the local mills are operating at a good rate.

Skoda Works, the largest Czechoslovak machinery and armament company, had in 1935 the highest level of business activity since 1930, according to a report to the Commerce Department from the American Commercial Attache at Prague. The invoiced sales turnover for the year totaled 1,074,000,000 crowns (approximately $43,000,000), representing a gain of 36 per cent as compared with 1934.

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. . . . NEW YORK. . . .

. . . Steel buying holds up well.

° ° °

. . . Tight delivery situation in sheets.

° ° °

. . . Railroad equipment buying expected this fall.

NEW YORK, July 28.—The volume of steel buying has held up amazingly well during the past week, giving further conviction to the trade that the customary summer lull may not come at all this year or will be minimized to a great extent. Most of the mills have accumulated new backlogs that will carry operations through August at virtually undiminished rates. A tight situation has developed in sheets, which are in such heavy demand that deliveries from many mills range from four to six weeks, depending upon the grade. The work of completing specifications received in June to anticipate the advance in prices has been complicated by the fact that July buyers have been demanding quick shipment, while those that bought last month have been equally insistent on getting the tonnage due them at the old prices. This situation has made it difficult for the mills to satisfy their customers on shipments. The filled-up condition of the sheet mills has brought in new orders through the necessity that buyers anticipate their requirements farther ahead than has been the custom in recent months.

Fairly heavy buying of cars and locomotives by the railroads is counted upon by the steel trade to give impetus to steel business this fall. With freight car loadings running around 700,000 cars per week, it is predicted that a continuance of this heavy movement over the next few months would be likely to bring about a shortage of equipment, necessitating the purchase of both cars and locomotives. It is known that several railroads are now figuring on new equipment and inquiries may come into the market within the very near future. According to *Railway Age*, freight car loadings in the first two weeks of July were 72.2 per cent of the 1925-29 average, or almost as large, both relatively and absolutely, as in July, 1931. If the recent upward trend continues, they will be substantially larger during the last half of 1936 than during the last half of any year since 1930. The peak month of freight movement is October. The number of surplus freight cars in the first two weeks of June was only 191,000, which compares with a surplus of 274,000 in 1935 and 626,000 in 1931, all of which points to renewed buying of cars by the railroads, even though they have already purchased this year more than in any year since 1930.

Pig Iron

Business is showing a moderate degree of improvement. As prices of domestic iron are stable and not likely to rise in the immediate future, foundries are usually buying one to three carloads at a time for prompt or nearby delivery, but some contracts are being made for coverage through the quarter. While the aggregate of the business being done has not gained materially, there is an increase in the number of individual orders.

Reinforcing Steel

Already a tendency toward firmness has been noticed in reinforcing steel quotations since the open announcement of prices. Extreme shading is still in evidence in New Jersey, but the New York trade feels that it is only a question of time before this situation will be remedied, as dealers are publishing their resale prices and will be inclined, it is believed, to adhere to them closely. Meanwhile, new business is coming out steadily, although not in large tonnages, and a general feeling of optimism prevails throughout the district. A Brooklyn fabricator was low bidder at $9 a ton off the market price for 150 tons of bars on the Jersey City stadium, on which a second set of bids was taken. W. Ames & Co. were low on 280 tons of bars for the New York division of the Treasury Department. Igoe Brothers took 106 tons in Bergen County, N. J., for highway work, and Concrete Steel Co. was awarded about 100 tons of bar trusses for repairs on the Queensboro bridge. Bids will be opened Aug. 4 on the 2500 tons necessary for the Ten Eyck housing project in the Williamsburgh section of Brooklyn. Carroll-McCreary Co., Inc., was awarded 1000 tons for the West Side elevated highway from 111th to 121st Streets.

. . . . ST. LOUIS. . . .

. . . Continued heat has affected production.

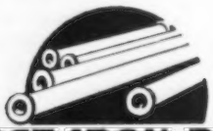
° ° °

. . . Steel buying shows signs of slackening.

ST. LOUIS, July 28.—The demand for finished steel has slowed down some as compared with the activity of the preceding few weeks. This falling off in buying is due to heavy commitments previously made, some of which were caused by fears of a steel strike. Specifications against contracts for structural steel are well maintained, but buying of sheets and wire products for farm work is light owing to drought conditions.

The excessive heat, which has continued for several weeks, with the exception of a few days last week, is having its effect on the melt of pig iron in the district, although the plants are proceeding with production to the best of their ability. In the Belleville stove sector they were able to get in a few more heats the latter part of the week than in the preceding week. The tractor plants at Peoria con-

tinue at peak production, and it is understood that this schedule will continue through September. There has been a let-up in the melt of the agricultural implement plants farther north because of inventory and repair work. Shipments of pig iron are at about the level of a month ago.



..CAST IRON PIPE..

Springfield, Mass., will close bids Aug. 4 on 1000 ft. of 6-in. class 150, double coated pipe, 6000 ft. of 8-in. and 1000 ft. of 16-in.

Northampton, Mass., has awarded a tonnage of 6 and 8-in. to United States Pipe & Foundry Co., delivery 15 days.

Battleboro, N. C., plans pipe lines for water system and other waterworks installation. Fund of $50,000 is being arranged through Federal aid.

Wauchula, Fla., plans about 4700 ft. for extensions in water system; also 250,000-gal. elevated steel tank and tower and other waterworks installation. E. R. Holden is resident engineer in charge.

Holly Hill, Fla., plans pipe lines for water system; also other waterworks installation. Financing will be arranged through Federal aid.

Pecos, Tex., plans pipe lines for water system; also other waterworks installation. Special election will be called soon to vote bonds for $25,000 for work.

Perry, Okla., plans about four miles of extra heavy pipe for main water trunk line; also pipe lines for distribution, with dam at water source. Entire project will cost about $212,000, of which $94,000 will be secured through Federal grant. Special election has been called on Aug. 11 to approve bonds for $118,000 for remainder of fund. W. R. Holway, 302 East Eighteenth Street, Tulsa, Okla., is consulting engineer.

Rossville, Ind., plans pipe lines for water system and other waterworks installation. Fund of $35,000 is being secured through Federal aid.

Elnora, Ind., plans pipe lines for water system. Fund of $54,500 has been secured through Federal aid for this and other waterworks installation.

Carlisle, Ind., plans pipe lines for water system and other waterworks installation. Fund of $39,800 is being secured through Federal aid.

Appleton, Wis., closes bids Aug. 1 on 4000 ft. of 6-in. centrifugal cast iron pipe.

Neenah, Wis., has low bid from American Cast Iron Pipe Co. on 150 tons for water purification plant.

Random Lake, Wis., has awarded 250 tons of 6 and 8-in. to James B. Clow & Sons for new water and sewage system.

Tigerton, Wis., closes bids Aug. 7 on about 125 tons of 4.6 and 8-in. for water system. Druar & Milinowski, Globe Building, St. Paul, Minn., are consulting engineers.

Bethany, Mo., plans trunk water pipe line; also other waterworks construction. Cost about $43,000. Financing will be arranged through Federal aid. Burns & McDonnell Engineering Co., 107 West Linwood Boulevard, Kansas City, Mo., is consulting engineer.

Salina, Kan., plans pipe lines for extensions in water system. Cost about $20,800. Fund is being secured through Federal aid.

Lewistown, Mont., plans about six and one-half miles of 20-in. for main water trunk line. Financing is being secured through Federal aid. Joseph M. Schmit, Lewistown, is engineer.

Bountiful, Idaho, will take bids soon on 232 tons of 4 to 12-in.

Metropolitan Water District, Los Angeles, has opened bids on 144 tons for Hayfield pumping plant.

North Sacramento, Cal., plans pipe lines for water system. Cost over $40,000 with other waterworks installation. F. H. Reynolds, Forum Building, Sacramento, is consulting engineer.

Long Beach, Cal., has placed 134 tons with United States Pipe & Foundry Co.

Inglewood, Cal., has awarded 110 tons of 4 and 6-in. to National Cast Iron Pipe Co.

Santa Barbara, Cal., has let 123 tons to American Cast Iron Pipe Co.

Twisp, Wash., plans pipe lines for water system and other waterworks installation. Fund of $30,000 is being arranged through Federal aid.

....PIPE LINES....

Sun Oil Co., 1608 Walnut Street, Philadelphia, will build 8-in. welded steel pipe line from Twin Oaks district, near Philadelphia, where connection will be made with refinery at Marcus Hook, Pa., to Newark, N. J., about 110 miles, for gasoline transmission. Pipe will be furnished by Jones & Laughlin Steel Corp., Pittsburgh. Cost close to $1,500,000.

Keystone Pipe Line Co., 260 South Broad Street, Philadelphia, plans welded steel pipe line from connection with present system through eight counties in Pennsylvania, terminating at Pittsburgh, for oil transmission. New line will pass through Reading, Williamsport and other centers, with facilities for service at these points. Cost close to $3,000,000.

Hope Natural Gas Co., 545 William Penn Way, Pittsburgh, plans welded steel pipe line from natural gas field near Wetzel, W. Va., to Spencer, W. Va., and vicinity, about 100 miles, for gas transmission. Cost about $900,000.

Crescent, Okla., plans steel pipe line for municipal natural gas system. Cost about $27,000. Special election has been called July 31 to approve bond issue.

Ajax Pipe Line Co., Tulsa, Okla., plans welded steel pipe line across Mississippi River from point near West Alton, Mo., to Woodriver, Ill., for oil transmission.

United States Engineer Office, St. Paul, Minn., closes bids Aug. 12 for 70 sections of steel discharge pipe, 20-in. diameter and 18 ft. long, and all appurtenant parts (Circular 29).

Stockdale, Tex., plans steel pipe lines for municipal natural gas distributing system. Financing is being arranged through Federal aid. Cost about $33,000.

White Eagle Oil Corp., Federal Reserve Building, Kansas City, Mo., has let construction contract to Williams Brothers, Inc., Tulsa National Bank Building, Tulsa, Okla., for 6-in. welded steel pipe line from oil refinery at Augusta, Kan., to Kansas City, Kan., about 178 miles, for gasoline transmission. Pipe will be furnished by National Tube Co., Pittsburgh. Bulk oil terminals for storage and distribution will be built at Kansas City and Topeka. Entire project will cost about $5,000,000. Company is affiliated with Socony-Vacuum Oil Co., New York.

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. . PHILADELPHIA . .

. . . Operations unchanged at 53 per cent.

o o o

. . . Active August and September certain.

o o o

. . . Sheets purchased for new model autobodies.

PHILADELPHIA, July 28.—All mills are far behind on deliveries, and probably a fortnight will pass before second quarter tonnages will be completely off the books. An encouraging factor is the steady influx of new bookings at higher price levels. A survey of this district has shown that aggregate new business is almost keeping pace with shipments, indicating that mill rolling schedules will suffer little during the next few weeks.

Individual mills here are operating at rates practically unchanged from last week; consequently the operating average for eastern Pennsylvania remains at 53 per cent of capacity, compared with 28 per cent at this time last year. Little or no raw steel is being stocked, and no mill looks for any decline in melt during the next month.

Pig Iron

Stronger prices and a tight supply situation in cupola cast iron scrap is throwing a little more business to sellers of pig iron. There has been no change in the general practice of ordering small quantities for quick delivery. Nevertheless, repeat orders are closer together, and the total volume of July bookings will undoubtedly exceed the June total. General foundry melt is holding to a comparatively high level,

Bars and Shapes

No district fabricator was awarded any project of over 75 tons during the week, with the exception of Easton Steel Structures, Inc., which will furnish 100 tons for a Riegel Paper Co. building at Riegelsville, N. J. There is a decided quietness in new fabricating business, but estimators are being kept busy on small private work. All large shops in the East are figuring bids for the 4500-ton Easton-Phillipsburg bridge. Reinforcing bar prices are firm. Awards during the past seven days include 600 tons to Taylor-Davis, Inc., for New Jersey highway construction, and 140 tons for a crossing elimination at Hightstown, N. J.

Plates

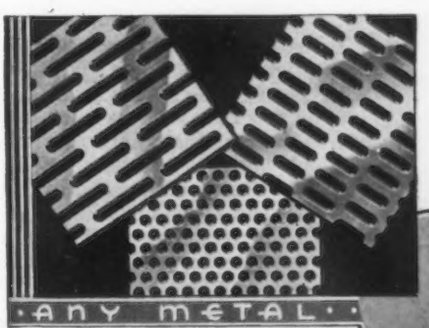
Miscellaneous demands for plates are holding up surprisingly well. Prices show no deviations from published quotations. The market is awaiting initial releases from Sun Shipbuilding Co. and Baldwin Locomotive Works on work recently secured. Alan Wood Steel Co. will soon start shipments of Chevrolet frame stock to Budd Mfg. Co. About 75,000 tons of this stock will be delivered over the next twelve months.

Sheets

Budd Mfg. Co. has placed a good tonnage of sheets for early August delivery for new model autobodies. This same company may soon be in the market again for sizable quantities of stainless steel as additional train orders are imminent. Tin plate demand is active, with some Pittsburgh mills eight weeks behind in deliveries and forced to pass up new business in some instances. Bethlehem, Superior and Youngstown split up the 250 tons of hot-rolled sheets, on which the Federal Prison Industries took bids last week. Published prices held although delivery and shipment provisions were interpreted liberally in several instances.

Imports

The following iron and steel imports were received here last week: 43 tons of manganese ore from Brazil; 125 tons of ferromanganese from Norway; 2011 tons of pig iron from British India; 1000 tons of pig iron from England; 29 tons of steel tubes and 11 tons of steel bars from Sweden; 4 tons of steel bars, 12 tons of structural shapes and 1 ton of steel bands from Germany; 6 tons of steel bars, 89 tons of structural shapes, 2 tons of steel bands from France; 130 tons of steel bars, 42 tons of diamond plates, 5 tons of steel hoops, 40 tons of structural shapes and 4 tons of steel bands from Belgium.



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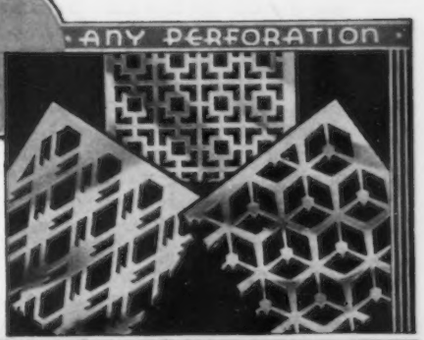

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. . . CINCINNATI . . .

. . . Demand for sheets holds production high.

o o o

. . . Some automotive buying for new models

CINCINNATI, July 28.—Gradually expanding automotive demand for sheets for new models held output at near capacity the past week. In addition, the widely diversified general demand shows no indication of easing. Current business is for immediate consumption and shipping instructions are urgent. The leading interest of this district reports full operation in all units except the Butler plant, where schedules are about 75 per cent. Backlogs have been reduced to equal about 10 days' operations and production schedules are geared to satisfy consumer needs as rapidly as possible. New price schedules are being well sustained and consumer acceptance appears general.

Steel production is unchanged from last week. Producers report 27 out of 34 open-hearths in operation.

Sporadic ordering of pig iron in small lots continues to sustain average demand near 1000 tons a week. Furnace interests report little recession in shipments. The stack of the Hamilton Coke & Iron Co., out for rebuilding, is expected to be blown in not later than Sept. 1. The foundry melt hovers near 60 per cent. Automotive and heating melters are in most active production, although the machine tool melt is better than anticipated.

Steel jobbing demand is holding to June levels, dispelling opinion that consumers ordered too heavily before July price advances.

CANADA

. . . Dominion trade picking up after heat wave.

o o o

. . . Business in general ahead of last year.

TORONTO, Ont., July 27.—Business is beginning to show recovery following the recent hot weather, and despite the fact that the summer holidays are in full swing, operations in the iron and steel industry are maintained at a fairly high level. Steel plants are running at approximately 75 per cent capacity and foundries in excess of 50 per cent. While no large tonnage contracts have been reported during the past week or 10 days, spot sales are holding at a good level and backlogs are well up to the high point for the year. The mining industry continues to furnish a good demand for steel and mining and milling machinery and further good orders are pending for early closing. The automotive industry, while running on short time at this season, is expected to show improvement within the next month or six weeks. Demand for agricultural implements is heavy both in western and eastern Canada and there is a good call on export account. Radiator and sanitaryware manufacturers have curtailed operations to some extent recently, but there is improvement in demand for structural shapes, due to increased building operations in connection with small jobs. Business in general is running well ahead of last year.

Demand for pig iron showed minor improvement for the week, with sales reported in excess of 700 tons. The improvement was due to the fact that there was little demand during the severe hot weather when foundries were running on short time. Present demand is to replenish stocks. Local blast furnace representatives look for a more active pig iron market around the middle of September. Pig iron production shows no change from earlier weeks with four stacks in blast. Prices are firm and unchanged.

Trading in iron and steel scrap in both the Toronto and Montreal markets is showing improvement, but dealers state that demand is for spot delivery only. Shipments of steel scrap, especially heavy melting steel, are going forward in good volume to the Hamilton area, and there is fair call from Montreal consumers, particularly for rails and steel axles. Dealers say that current quotations strike a good average of what they are prepared to pay for scrap.

. . SAN FRANCISCO . .

. . . Business activity shows no let-up.

o o o

. . . Pumping plant calls for 1565 tons of steel.

SAN FRANCISCO, July 27.—Featuring the new projects listed during the week was the Hayfield pumping plant, on which the Metropolitan Water District will open bids at Los Angeles, Aug. 27. Approximately 970 tons of plates, 451 tons of structural steel and 144 tons of cast iron pipe will be involved. Estimates on the air terminal building, to be constructed on Yerba Buena Shoals in San Francisco Bay, now show 1070 tons of bars rather than the 500 tons previously reported. Some confusion has existed as to whether the Federal Government has two or three major projects listed for Los Angeles. It now appears that the Federal building and the combined court house and post office are one and the same project instead of two. Approximately 20,000 tons of shapes will be involved. Lettings have not yet been made on the Federal jail, requiring 1000 to 1200 tons of bars, which will be constructed at San Pedro, Cal.

Awards during the past week totaled 2703 tons of structural steel, 2647 tons of reinforcing bars and 2406 tons of plates. At Denver the Lock Joint Pipe Co. took the contract for conduit No. 16 for which 1800 tons of bars and 1800 tons of plates are required. Bethlehem Steel Corp. was finally awarded the 992 tons of shapes for the State livestock building at San Francisco. Cast iron pipe lettings were for minor tonnages and went to three companies.

Business activity generally on the West Coast continues strong and warehouses are maintaining their volume. Mill operation has slackened slightly.

The export of scrap to the Orient has dipped to a new low for the year owing largely to lack of shipping space.

. . .NON-FERROUS. . .

. . . *Copper quieter; July sales may reach 175,000 tons.*

o o o

. . . *Tin more active; lead and zinc unchanged and in fair demand.*

NEW YORK, July 28.—Interest in new copper commitments has quieted considerably, which is a natural reaction from the buying spree of the past seven days. Although the bulk of the month's sales was entered prior to the price advance, many consumers have considered copper at 9.75c. sufficiently attractive to send in sizable additional orders. Sales yesterday amounted to 374 tons, bringing the month's total up to 173,832 tons. Most of this metal will be shipped in October, although some will extend into November. Sellers look for quiet market conditions to prevail over the next fortnight. However, a sharp bulge in activity abroad would undoubtedly stir up this market considerably.

Foreign demand today was quite brisk at a price level variously reported from 9.45c. to 9.50c. a lb., c.i.f. usual Continental base ports. Although current quotations are very firm, operators abroad look for no further rapid rises in the immediate future.

Tin

This market has been boiling today with professionals manipulating prices and entering modest orders. Actual consumer buying, however, has not been impressive. The London market has been very erratic all week as the Tin Committee meeting was broken off with nothing decided. Another meeting soon may be scheduled. Today, Straits averaged 42c. a lb., New York, and the opening session in London showed spot metal at £179 10s., the three-month position was £176 5s. and the Eastern market averaged £183 15s. According to the latest tin statistics, world visible stocks at the end of June stood at 15,536 tons, against 17,461 tons at the end of May. Tin consumption in the United States for the year ended May, 1936, totaled 66,288 tons, compared with 50,960 tons for the year ended May, 1935.

Lead

Daily sales are considerably ahead of the volume most sellers had anticipated. Most of the current ordering is for the August position, and present indications are that that month's shipments will be exceptionally heavy—probably well over 40,000 tons. Some more August tonnage is expected over the next fortnight. Several sellers have opened September books to special customers, and the steady demand for this protection would indicate that consumers believe a price rise is in the offing. However, the statistical position of the market hardly warrants an advance in quotations. Most sellers indicate a desire to reduce the heavy overhanging stocks at the present 4.60c., New York, price level, rather than discourage buying by establishing higher quotations.

Zinc

With prime Western prices holding steadily at 4.80c. a lb., East St. Louis, and 5.17½c., New York, all zinc outlets have been coming steadily into the market for additional commitments. Sales for the last seven-day period were quite heavy, consisting of 24,044 tons of prime Western and 1500 tons of brass special and select grades. Unfilled orders rose 22,184 tons during the same period to today's position of 44,326 tons.

The Week's Prices. Cents Per Pound for Early Delivery

	July 22	July 23	July 24	July 25	July 27	July 28
Electrolytic copper, Conn.*	9.75	9.75	9.75	9.75	9.75	9.75
Lake copper, N. Y.	9.87½	9.87½	9.87½	9.87½	9.87½	9.87½
Straits tin, Spot, New York	44.00	43.62½	43.70	....	42.00	42.00
Zinc, East St. Louis	4.80	4.80	4.80	4.80	4.80	4.80
Zinc, New York†	5.17½	5.17½	5.17½	5.17½	5.17½	5.17½
Lead, St. Louis	4.45	4.45	4.45	4.45	4.45	4.45
Lead, New York	4.60	4.60	4.60	4.60	4.60	4.60

*Delivered Connecticut Valley; price ¼c. lower delivered in New York.
†Includes emergency freight charge.

Aluminum, virgin 99 per cent plus, 19.00c.-21.00c. a lb. delivered.
Aluminum, No. 12 remelt No. 2 standard, in carloads, 17.00c. lb., delivered.
Nickel, electrolytic, 35c. to 36c. a lb. base refinery, in lots of 2 tons or more.
Antimony, Asiatic, 13.00c. a lb., New York.
Quicksilver, $74.00 to $75.00 per flask of 76 lb.
Brass ingots, commercial 85-5-5-5, 9.25c. a lb., delivered; in Middle West ¼c. a lb. is added on orders for less than 40,000 lb.

From New York Warehouse

Delivered Prices, Base per Lb.

Tin, Straits pig	44.00c. to 45.00c.
Tin, bar	46.00c. to 47.00c.
Copper, Lake	10.25c. to 11.25c.
Copper, electrolytic	10.25c. to 11.25c.
Copper, castings	10.00c. to 11.00c.
*Copper sheets, hot-rolled	17.00c.
*High brass sheets	15.12½c.
*Seamless brass tubes	17.37½c.
*Seamless copper tubes	17.50c.
*Brass rods	13.12½c.
Zinc, slabs	5.75c. to 6.75c.
Zinc, sheets (No. 9), casks, 1200 lb. and over	10.25c.
Lead, American pig	5.10c. to 6.10c.
Lead, bar	6.10c. to 7.10c.
Lead, Sheets, cut	8.25c.
Antimony, Asiatic	14.00c. to 15.00c.
Alum., virgin, 99 per cent plus	23.30c.
Alum., No. 1 for remelting, 98 to 99 per cent	18.50c. to 20.00c.
Solder, ½ and ½	28.50c. to 29.50c.
Babbitt metal, commercial grades	25.00c. to 60.00c.

*These prices are also for delivery from Chicago and Cleveland warehouses.

From Cleveland Warehouse

Delivered Prices Per Lb.

Tin, Straits pig	45.00c.
Tin, bar	47.00c.
Copper, Lake	10.50c. to 10.75c.
Copper, electrolytic	10.50c. to 10.75c.
Copper, castings	10.25c. to 10.50c.
Zinc, slabs	6.50c. to 6.75c.
Lead, American pig	5.20c. to 6.50c.
Lead, bar	8.50c.
Antimony, Asiatic	15.00c.
Babbitt metal, medium grade	19.00c.
Babbitt metal, high grade	49.00c.
Solder, ½ and ½	24.50c.

Old Metals, Per Lb., New York

Buying prices are paid by dealers for miscellaneous lots from smaller accumulators, and selling prices are those charged to consumers after the metal has been prepared for their uses. (All prices are nominal.)

	Dealers' Buying Prices	Dealers' Selling Prices
Copper, hvy. crucible	7.50c.	8.25c.
Copper, hvy. and wire	7.37½c.	7.87½c.
Copper, light and bottoms	6.37½c.	6.87½c.
Brass, heavy	4.25c.	4.87½c.
Brass, light	3.50c.	4.25c.
Hvy. machine composition	6.25c.	6.75c.
No. 1 yel. brass turnings	5.25c.	5.75c.
No. 1 red brass or compos. turnings	5.87½c.	6.37½c.
Lead, heavy	3.62½c.	4.00c.
Sheet aluminum	13.25c.	14.75c.
Zinc	2.50c.	2.87½c.
Cast aluminum	12.12½c.	13.25c.

IRON AND STEEL SCRAP

. . . Composite advances 42c. to $13.67 a gross ton.

o o o

. . . All markets have strong undertone; further rises likely.

o o o

. . . Little current buying.

STIMULATED by sharp increases at Pittsburgh, Chicago and Philadelphia the scrap composite this week rose to $13.67, a level higher than was attained at any time last year, although the flurry of buying in March of this year boosted the composite to $14.75. Price advances in almost every item featured the Chicago market as brokers were forced to cover their shortages, while at Pittsburgh mills bid as high as $15 without securing adequate tonnages for their needs, since supplies in that territory are not plentiful and small dealers are apparently holding out for further profit on higher prices.

All markets this week are bullish, although not much activity was reported from Buffalo, St. Louis and Cincinnati. The high rate of operations at the mills which this week reached 71½ per cent, equaling the high of the year, and anticipation of further heavy ordering in the fall is causing much dealer speculation in all districts.

Pittsburgh

Mills have bid $14.75 for heavy melting steel and then $15 without securing more than a few thousand tons. A week ago dealers were paying $14.25 to cover short contracts at lower figures and now they are paying $14.50, making the market quotable at $14.50 to $15. The outcome of scrap is limited partly because supplies are far from plentiful but also because small dealers, having made profits recently, are reluctant to sell. The general advance is ascribed to mills finding their sales much heavier than expected. With one buyer in the market, No. 2 steel is up 25c, leaving it $1.50 under the new quotation on No. 1. The remainder of the list has been dull but is expected to advance sympathetically.

Chicago

Prices are moving up all along the line, and excepting steel mill grades the higher prices are being paid by consumers. Dealers and brokers appraise the situation as one which is on solid ground and they are offering as high as $14 a gross ton, delivered, for No. 1 steel and are paying railroads as high as $14.50. At these levels they are rapidly moving away from their short position. Sources of scrap find offered prices attractive, and, where 10 days ago supplies were beginning to dry up, brokers are now having no trouble in their haste to cover old commitments.

Cleveland

The market is very firm and prices have advanced 25c. a ton or more on steel making grades. Dealers are paying $13.50 for No. 1 steel for Cleveland delivery and $12.50 for No. 2. These quotations are not bringing out much scrap. No. 1 steel is bringing $14.25 in the Valley district and No. 2, $13.50. Consumers still have considerable scrap due on old contracts and are not placing any new orders. One Valley district mill has held up shipments but others are accepting scrap in liberal quantities.

Philadelphia

With mills prophesying heavy rolling schedules in August and September, scrap brokers here are becoming increasingly bullish. There have been no new steel sales made to test the current strong price undertone. Nevertheless, when No. 1 demand does appear it is very likely that $13 or better will be established. Even now brokers are paying up to $12.50 and $11.50 for No. 1 and No. 2 respectively for coverage on old orders. Old bundles are up to near $10.75 on several recent small sales, and brokers are offering up to $7 to fill a $7.25 order of No. 1 blast furnace. Yards are finding it necessary to post small advances each week to attrack more material in for preparation. Just what the true status of this market really is may be clarified somewhat late this week when Budd Mfg. Co. sells its August list of 2200 tons of compressed sheets, 400 tons of No. 1 and 400 tons of heavy cast.

Boston

Scrap prices are firmer all along the line and business is quite brisk. For Pittsburgh delivery No. 1 steel and skeleton are 50c. a ton higher, while breakable cast is up 25c. and shafting about $50c. for eastern Pennsylvania. With no demand for No. 2 steel for Pittsburgh, prices for it are purely nominal. No. 1 and 2 steel for export have advanced 25c. a ton, making a net gain in the past fortnight of 50c. Indications are that a further advance will be made during the next few days because demand is considerably in excess of the floating supply. Norway has become a factor in the export market. A 1880-ton lot left for that country last week, making two lots within a month. However, Japan is the big factor just now, and a boat is scheduled to leave for that country this week with 6500 tons.

New York

The continued high rate of steel operations is reflected by increased buying of scrap in this district for mills in eastern Pennsylvania and consequent advances in prices here. Increases were marked up for No. 1 and No. 2 steel, as brokers were forced to extend their prices in order to secure sufficient scrap to cover export and domestic orders. One broker is offering $10.25 for heavy breakable cast for eastern Pennsylvania delivery and other cast grades are sympathetically higher. There is little new export business, but loading is constant on unfilled orders with Japan as the principal consignee.

Buffalo

The market is very quiet with only small transactions being noted. Dealers are still busy on June and July No. 1 steel orders, taken at $14 and $14.50 a ton. Mills continue to receive all shipments, and the leading consumer continues to offer $13 for No. 1 with no sizable receipts. Heavy barge and upper Lake shipments are coming into local mills.

St. Louis

An East Side steel mill bought a small tonnage of specialties, which the yards were able to move because of a brief respite from the heat, which generally had retarded the handling of scrap iron. Prices are unchanged. The only railroad list pending is 15 carloads offered by the St. Louis-Southwestern Railway.

Cincinnati

The market is being sustained by active dealer speculation in anticipation of heavy mill ordering in the fall. Consequently, bids have advanced 25c. on all important items. Yard supplies and dealer holdings have increased. Mill interest is still low, current business being for small urgencies only.

Iron and Steel Scrap Prices

PITTSBURGH

Per gross ton delivered to consumer:

No. 1 hvy. mltng. steel.	$14.50 to $15.00
No. 2 hvy. mltng. steel.	13.00 to 13.50
No. 2 RR. wrought	14.00 to 14.50
Scrap rails	14.00 to 14.50
Rails, 3 ft. and under..	16.00 to 16.50
Comp. sheet steel ...	14.00 to 14.50
Hand bundled sheets..	13.00 to 13.50
Hvy. steel axle turn...	12.50 to 13.00
Machine shop turn.....	9.50 to 10.00
Short shov. turn.....	9.50 to 10.00
Mixed bor. & turn. ..	7.50 to 8.00
Cast iron borings.....	10.00 to 10.50
Cast iron carwheels...	13.75 to 14.25
Hvy. breakable cast...	12.75 to 13.25
No. 1 cast	14.50 to 15.00
RR. knuckles & cplrs..	17.00 to 17.50
Rail coil & leaf springs	17.00 to 17.50
Rolled steel wheels....	17.00 to 17.50
Low phos. billet crops.	17.50 to 18.00
Low phos. sh. bar....	17.00 to 17.50
Low phos. punchings.	16.25 to 16.75
Low phos. plate scrap.	16.00 to 16.50
Steel car axles	15.50 to 16.00

CLEVELAND

Per gross ton delivered to consumer:

No. 1 hvy. mltng. steel	$13.25 to $13.75
No. 2 hvy. mltng. steel.	12.25 to 12.75
Comp. sheet steel	12.75 to 13.25
Light bund. stampings	9.00 to 9.50
Drop forge flashings...	12.25 to 12.75
Machine shop turn....	8.25 to 8.75
Short shov. turn.....	8.50 to 9.00
No. 1 busheling	8.50 to 8.75
Steel axle turnings....	9.50 to 10.00
Low phos. billet crops	17.00 to 17.50
Cast iron borings	.... 8.75
Mixed bor. & turn.....	.... 8.75
No. 2 busheling	.... 8.75
No. 1 cast	14.50 to 15.00
Railroad grate bars...	8.00 to 8.50
Stove plate	9.00 to 9.50
Rails under 3 ft.	16.00 to 16.50
Rails for rolling	16.50 to 17.00
Railroad malleable ...	17.00 to 17.50
Cast iron carwheels...	.... 15.50

PHILADELPHIA

Per gross ton delivered to consumer:

No. 1 hvy. hltng. steel.	.... $12.50
No. 2 hvy. mltng. steel.	.... 11.50
Hydraulic bund., new.	$12.00 to 12.50
Hydraulic bund., old..	10.50 to 10.75
Steel rails for rolling..	15.00 to 15.50
Cast iron carwheels...	14.00 to 14.50
Hvy. breakable cast...	14.00 to 14.25
No. 1 cast	14.50 to 15.00
Stove plate (steel wks.)	.... 10.50
Railroad malleable ...	.... 16.50
Machine shop turn....	8.00 to 8.50
No. 1 blast furnace....	6.75 to 7.25
Cast borings	.... 6.25
Heavy axle turnings..	11.00 to 11.50
No. 1 low phos. hvy....	16.00 to 16.50
Couplers & knuckles..	16.00 to 16.50
Rolled steel wheels....	16.00 to 16.50
Steel axles	16.50 to 17.00
Shafting	19.00 to 19.25
No. 1 RR. wrought...	14.50 to 15.00
Spec. iron & steel pipe	12.00 to 12.50
Bundled sheets	11.50 to 12.00
No. 1 forge fire	12.00 to 12.50
Cast borings (chem.)..	10.50 to 13.00

CHICAGO

Delivered to Chicago district consumers:

	Per Gross Ton
Hvy. mltng. steel	$13.50 to $14.00
Auto. hvy. mltng. steel	11.50 to 12.00
Shoveling steel	13.50 to 14.00
Hydraul. comp. sheets.	12.25 to 12.75
Drop forge flashings..	11.50 to 12.00
No. 1 busheling	11.50 to 12.00
Rolled carwheels	15.50 to 16.00
Railroad tires cut	15.00 to 15.50
Railroad leaf springs..	15.00 to 15.50
Axle turnings	12.50 to 13.00
Steel coup. & knuckles	15.50 to 16.00
Coil springs	16.00 to 16.50
Axle turn. (elec.).....	13.25 to 13.75
Low phos. punchings..	16.00 to 16.50
Low phos. plates, 12 in. and under	16.00 to 16.50
Cast iron borings	6.50 to 7.00
Short shov. turnings..	6.75 to 7.25
Machine shop turn....	6.00 to 6.50
Rerolling rails	15.00 to 15.50
Steel rails under 3 ft...	15.50 to 16.00
Steel rails under 2 ft...	16.25 to 16.75
Angle bars, steel	15.50 to 16.00
Cast iron carwheels...	14.00 to 14.50
Railroad malleable ...	16.00 to 16.50
Agric. malleable	14.00 to 14.50
	Per Net Ton
Iron car axles	$17.50 to $18.00
Steel car axles	16.00 to 16.50
No. 1 RR. wrought....	12.50 to 13.00
No. 2 RR. wrought....	12.00 to 12.50
No. 2 busheling, old...	$6.00 to $6.50
Locomotive tires	12.00 to 12.50
Pipes and flues	8.00 to 8.50
No. 1 machinery cast..	12.50 to 13.00
Clean auto. cast	11.50 to 12.00
No. 1 railroad cast....	11.50 to 12.00
No. 1 agric. cast.....	10.00 to 10.50
Stove plate	7.00 to 7.50
Grate bars	8.50 to 9.00
Brake shoes	8.50 to 9.00

BUFFALO

Per gross ton, f.o.b. consumers' plants:

No. 1 hvy. mltng. steel.	$13.00
No. 2 hvy. mltng. steel.	$11.25 to 11.75
Scrap rails	12.00 to 12.50
New hy. b'ndled sheets	11.25 to 11.75
Old hydraul. bundles..	10.25 to 10.75
Drop forge flashings..	11.25 to 11.75
No. 1 busheling	11.25 to 11.75
Hvy. axle turnings...	10.50 to 11.00
Machine shop turn....	6.00 to 6.50
Knuckles & couplers..	15.00 to 15.50
Coil & leaf springs....	15.00 to 15.50
Rolled steel wheels....	15.00 to 15.50
Low phos. billet crops.	15.50 to 16.00
Short shov. turnings..	9.00 to 9.50
Mixed bor. & turn....	8.00 to 8.50
Cast iron borings	8.00 to 8.50
No. 2 bushelings.....	.... 6.50
Steel car axles	13.50 to 14.00
Iron axles	12.00 to 12.50
No. 1 machinery cast..	13.50 to 14.00
No. 1 cupola cast	13.00 to 13.50
Stove plate	10.50 to 11.00
Steel rails under 3 ft..	15.75 to 16.25
Cast iron carwheels...	11.50 to 12.00
Railroad malleable	15.00 to 15.50
Chemical borings	9.00 to 9.50

BIRMINGHAM

Per gross ton delivered to consumer:

Hvy. melting steel....	$11.00 to $11.50
Scrap steel rails.....	11.50 to 12.00
Short shov. turnings..	.... 7.00
Stove plates	.... 8.00
Steel axles	12.00 to 12.50
Iron axles	12.00 to 12.50
No. 1 RR. wrought....	8.50 to 9.00
Rails for rolling	12.50 to 13.00
No. 1 cast	12.00 to 12.50
Tramcar wheels	11.00 to 12.00

ST. LOUIS

Dealers' buying prices per gross ton delivered to consumer:

Selected hvy. steel....	$12.75 to $13.25
No. 1 hvy. melting....	12.25 to 12.75
No. 2 hvy. melting....	10.00 to 10.50
No. 1 locomotive tires.	12.00 to 12.50
Misc. stand-sec. rails..	13.25 to 13.75
Railroad springs	14.00 to 14.50
Bundled sheets	9.50 to 10.00
No. 2 RR. wrought.....	12.25 to 12.75
No. 1 busheling	8.50 to 9.00
Cast bor. & turn.....	4.00 to 4.50
Rails for rolling	14.00 to 14.50
Machine shop turn....	4.00 to 4.50
Heavy turnings	9.25 to 9.75
Steel car axles	14.00 to 14.50
Iron car axles	15.00 to 16.00
No. 1 RR. wrought....	11.00 to 11.50
Steel rails under 3 ft...	14.25 to 14.75
Steel angle bars	14.00 to 14.50
Cast iron carwheels...	11.50 to 12.00
No. 1 machinery cast.	10.75 to 11.25
Railroad malleable	13.50 to 14.00
No. 1 railroad cast....	11.00 to 11.50
Stove plate	7.50 to 8.00
Agricul. malleable	12.50 to 13.00
Grate bars	9.00 to 9.50
Brake shoes	10.00 to 10.50

CINCINNATI

Dealers' buying prices per gross ton:

No. 1 hvy. mltng. steel.	$10.00 to $10.50
No. 2 hvy. mltng. steel.	8.00 to 8.50
Scrap rails for mltng.	10.50 to 11.00
Loose sheet clippings.	5.75 to 6.25
Bundled sheets	7.75 to 8.25
Cast iron borings	4.50 to 5.00
Machine shop turn.....	5.25 to 5.75
No. 1 busheling	8.50 to 9.00
No. 2 busheling	4.25 to 4.75
Rails for rolling	11.00 to 11.50
No. 1 locomotive tires	9.50 to 10.00
Short rails	14.00 to 14.50
Cast iron carwheels ..	10.50 to 11.00
No. 1 machinery cast..	11.50 to 12.00
No. 1 railroad cast....	10.75 to 11.25
Burnt cast	7.75 to 8.25
Stove plates	7.75 to 8.25
Agricult. malleable ..	9.75 to 10.25
Railroad malleable ...	11.50 to 12.00

DETROIT

Dealers' buying prices per gross ton:

No. 1 hvy. mltng. steel.	$10.75 to $11.25
No. 2 hvy. mltng. steel.	10.00 to 10.50
Boring and turnings..	7.00 to 7.50
Long turnings	6.75 to 7.25
Short shov. turnings...	$7.75 to $8.25
No. 1 machinery cast..	14.50 to 15.00
Automotive cast	14.25 to 14.75
Hydraul. comp. sheets	11.25 to 11.75
Stove plates	8.00 to 8.50
New factory bushel...	10.00 to 10.50
Old No. 2 busheling...	6.00 to 6.50
Sheet clippings	8.00 to 8.50
Flashings	10.00 to 10.50
Low phos. plate scrap	11.25 to 11.75

CANADA

Dealers' buying prices per gross ton:

	Toronto	Montreal
Hvy. melting steel.....	$7.50	$7.00
Rails, scrap	8.50	8.00
Machine shop turn.....	4.00	4.00
Boiler plate	7.00	6.00
Hvy. axle turnings.....	4.50	4.00
Cast borings	5.00	4.50
Steel borings	4.00	4.00
Wrought pipe	4.00	4.00
Steel axles	8.50	9.00
Axles, wrought iron....	9.00	9.50
No. 1 machinery cast..	11.50	11.00
Stove plate	7.50	7.00
Standard carwheels	11.00	10.50
Malleable	7.00	7.00
Shoveling steel	6.50	6.00
Bushelings	6.00	5.50
Compressed sheets	6.50	6.00

YOUNGSTOWN

Per gross ton delivered to consumer:

No. 1 hvy. mltng. steel.	$13.75 to $14.25
Hydraulic bundles	13.50 to 13.75
Machine shop turn.....	10.00 to 10.50

NEW YORK

Dealers' buying prices per gross ton:

No. 1 hvy. mltng. steel.	$9.75 to $10.25
No. 2 hvy. mltng. steel.	8.75 to 9.25
Hvy. breakable cast..	10.00 to 10.25
No. 1 machinery cast.	10.25 to 10.75
No. 2 cast	8.75 to 9.25
Stove plate	6.75 to 7.25
Steel car axles	13.00 to 13.50
Shafting	14.00 to 14.50
No. 1 RR. wrought ...	9.00 to 9.50
No. 1 wrought long....	8.50 to 9.00
Spec. iron & steel pipe	8.50 to 9.00
Forge fire	7.50 to 8.00
Rails for rolling	10.50 to 11.00
Short shov. turnings..	4.00 to 4.25
Machine shop turn....	4.00 to 4.25
Cast borings	4.50 to 5.00
No. 1 blast furnace....	3.00 to 3.50
Cast borings (chem.)..	9.50 to 10.50
Unprepar. yard scrap.	5.00 to 5.50

Per gross ton, delivered local foundries:

No. 1 machn. cast....	.... $11.50
No. 1 hvy. cast cupola.	.... 9.50
No. 2 cast	.... 8.00

Add 25c. to 50c. to above quotations to secure North Jersey prices.

BOSTON

Dealers' buying prices per gross ton:

No. 1 hvy. mltng. steel.	$8.15 to $8.40
Scrap rails	8.25 to 8.50
No. 2 steel	7.00 to 7.40
Breakable cast	.... 9.00
Machine shop turn.....	.... 3.90
Bund. skeleton long...	7.00 to 7.40
Shafting	14.00 to 14.25
Cast bor. chemical...	5.00 to 7.00

Per gross ton delivered consumers' yards:

Textile cast	$11.00 to $12.00
No. 1 machine cast ..	11.00 to 12.00
Stove plate	.... 9.00

EXPORT

Brokers' buying prices per gross ton:

New York, delivered alongside barges	
No. 1 hvy. mltng. steel.	.... $10.00
No. 2 hvy. mltng. steel.	.... 9.00
No. 2 cast	$8.00 to 8.50
Stove plate	7.00 to 7.25
Rails (scrap)	10.50 to 11.00
Boston, on cars at Army Base or Mystic Wharf	
No. 1 hvy mltng. steel.	.... $11.00
No. 2 hvy. mltng. steel.	.... 10.00
Rails (scrap)	.... 11.25
Stove plate	.... 7.50
Machine shop turn.....	.... 5.25
New Orleans, on cars at Stuyvesant Dock	
No. 1 hvy. mltng. steel.	$10.00 to $10.50
No. 2 hvy. mltng. steel.	9.00 to 9.50
Los Angeles, on cars or trucks at local piers	
No. 1 hvy. mltng. steel.	$10.50 to $11.00
Compressed bundles ..	8.50 to 9.00

PRICES ON FINISHED AND SEMI-FINISHED IRON AND STEEL

SEMI-FINISHED STEEL

Billets, Blooms and Slabs

F.o.b. Pittsburgh, Chicago, Gary, Cleveland, Youngstown, Buffalo, Birmingham. Prices at Duluth are $2 a ton higher, and delivered Detroit $3 higher.

	Per Gross Ton
Rerolling	$30.00
Forging quality	37.00

Sheet Bars

F.o.b. Pittsburgh, Chicago, Cleveland, Youngstown, Buffalo, Canton, Sparrows Point, Md.

	Per Gross Ton
Open-hearth or Bessemer	$30.00

Skelp

F.o.b. Pittsburgh, Chicago, Youngstown, Buffalo, Coatesvile, Pa., Sparrows Point, Md.

	Per Lb.
Grooved, universal and sheared	1.80c.

Wire Rods

(Nos. 4 and 5)

	Per Gross Ton
F.o.b. Pittsburgh or Cleveland	$38.00
F.o.b. Chicago, Youngstown or Anderson, Ind.	39.00
F.o.b. Worcester, Mass.	40.00
F.o.b. Birmingham	41.00
F.o.b. San Francisco	47.00
F.o.b. Galveston	44.00

BARS, PLATES, SHAPES

Iron and Steel Bars

Soft Steel

	Base per Lb.
F.o.b. Pittsburgh	1.95c.
F.o.b. Chicago or Gary	2.00c.
F.o.b. Duluth	2.10c.
Del'd Detroit	2.10c.
F.o.b. Cleveland	2.00c.
F.o.b. Buffalo	2.05c.
Del'd Philadelphia	2.26c.
Del'd New York	2.30c.
F.o.b. Birmingham	2.10c.
F.o.b. cars dock Gulf ports	2.35c.
F.o.b. cars Pacific ports	2.50c.

Rail Steel

(For merchant trade)

F.o.b. Pittsburgh	1.80c.
F.o.b. Cleveland, Chicago, Gary or Moline, Ill.	1.85c.
F.o.b. Buffalo	1.90c.
F.o.b. Birmingham	1.95c.
F.o.b. cars dock Gulf ports	2.20c.
F.o.b. cars dock Pacific ports	2.35c.

Billet Steel Reinforcing

(Straight lengths as quoted by distributors)

F.o.b. Pittsburgh	2.05c.
F.o.b. Buffalo, Cleveland, Youngstown, Chicago, Gary or Birmingham	2.10c.
Del'd Detroit	2.20c.
F.o.b. cars dock Gulf ports	2.45c.
F.o.b. cars dock Pacific ports	2.45c.

Rail Steel Reinforcing

(Straight lengths as quoted by distributors)

F.o.b. Pittsburgh	1.90c.
F.o.b. Buffalo, Cleveland, Youngstown, Chicago, Gary or Birmingham	1.95c.
F.o.b. cars dock Gulf ports	2.30c.
F.o.b. cars dock Pacific ports	2.30c.

Iron

F.o.b. Chicago	1.80c.
F.o.b. Pittsburgh (refined)	2.10c.
Delivered New York	2.05c.
Delivered Philadelphia	2.10c.

Cold Finished Bars and Shafting*

	Base per Lb.
F.o.b. Pittsburgh	2.25c.
F.o.b. Cleveland, Chicago and Gary	2.30c.
F.o.b. Buffalo	2.35c.
Del'd Detroit	2.40c.
Del'd eastern Michigan	2.45c.

*In quantities of 10,000 to 19,999 lb.

Plates

	Base per Lb.
F.o.b. Pittsburgh	1.90c.
F.o.b. Chicago or Gary	1.95c.
Del'd Cleveland	2.095c.
F.o.b. Coatesville or Spar. Pt.	2.00c.
Del'd Philadelphia	2.09c.
Del'd New York	2.19c.
F.o.b. Birmingham	2.05c.
F.o.b. cars dock Gulf ports	2.30c.
F.o.b. cars dock Pacific ports	2.45c.
Wrought iron plates, f.o.b. Pittsburgh	3.20c.

Floor Plates

F.o.b. Pittsburgh	3.45c.
F.o.b. Chicago	3.50c.
F.o.b. Coatesville	3.55c.
F.o.b. cars dock Gulf ports	3.85c.
F.o.b. cars dock Pacific ports	4.00c.

Structural Shapes

	Base per Lb.
F.o.b. Pittsburgh	1.90c.
F.o.b. Chicago	1.95c.
Del'd Cleveland	2.095c.
F.o.b. Buffalo or Bethlehem	2.00c.
Del'd Philadelphia	2.115c.
Del'd New York	2.1625c.
F.o.b. Birmingham (standard)	2.05c.
F.o.b. cars dock Gulf ports	2.30c.
F.o.b. cars dock Pacific ports	2.45c.

Steel Sheet Piling

	Base per Lb.
F.o.b. Pittsburgh	2.25c.
F.o.b. Chicago or Buffalo	2.35c.
F.o.b. cars dock Gulf or Pacific Coast ports	2.70c.

RAILS AND TRACK SUPPLIES

F.o.b. Mill

Standard rails, heavier than 60 lb. per gross ton	$36.37½
Angle bars, per 100 lb.	2.55

F.o.b. Code Basing Points

Light rails (from billets) per gross ton	$35.00
Light rails (from rail steel) per gross ton	34.00

	Base per 100 Lb.
Spikes	2.60
Tie plates, steel	1.90
Tie plates, Pacific Coast ports	2.00
Track bolts, to steam railroads	3.60
Track bolts, to jobbers, all sizes (per 100 counts)	70 per cent off list

Basing points on light rails are Pittsburgh, Chicago and Birmingham; on spikes and tie plates, Pittsburgh, Chicago, Buffalo, Portsmouth, Ohio, Weirton, W. Va., St. Louis, Kansas City, Minnequa, Colo., Birmingham and Pacific Coast ports; on tie plates alone, Steelton Pa.; on spikes alone, Cleveland, Youngstown, Lebanon, Pa., Columbia, Pa., Richmond, Va.

SHEETS, STRIP, TIN PLATE, TERNE PLATE

Sheets

Hot Rolled

	Base per Lb.
No. 10, f.o.b. Pittsburgh	1.95c.
No. 10, f.o.b. Gary	2.05c.
No. 10, de'd Detroit	2.15c.
No. 10, del'd Philadelphia	2.26c.
No. 10, f.o.b. Birmingham	2.10c.
No. 10, f.o.b. cars dock Pacific ports	2.50c.

Hot-Rolled Annealed

No. 24, f.o.b. Pittsburgh	2.50c.
No. 24, f.o.b. Gary	2.60c.
No. 24, del'd Detroit	2.70c.
No. 24, del'd Philadelphia	2.81c.
No. 24, f.o.b. Birmingham	2.65c.
No. 24, f.o.b. cars dock Pacific ports	3.15c.
No. 24, wrought iron, Pittsburgh	4.30c.

Heavy Cold-Rolled

No. 10 gage, f.o.b. Pittsburgh	2.60c.
No. 10 gage, f.o.b. Gary	2.70c.
No. 10 gage, f.o.b. Detroit	2.80c.
No. 10 gage, del'd Philadelphia	2.91c.
No. 10 gage, f.o.b. Birmingham	2.75c.
No. 10 gage, f.o.b. cars dock Pacific ports	3.20c.

Light Cold-Rolled

No. 20 gage, f.o.b. Pittsburgh	3.05c.
No. 20 gage, f.o.b. Gary	3.15c.
No. 20 gage, del'd Detroit	3.25c.
No. 20 gage, del'd Philadelphia	3.36c.
No. 20 gage, f.o.b. Birmingham	3.20c.
No. 20 f.o.b. cars dock Pacific ports	3.60c.

Galvanized Sheets

No. 24 gage, f.o.b. Pittsburgh	3.20c.
No. 24, f.o.b. Gary	3.30c.
No. 24, del'd Philadelphia	3.51c.
No. 24, f.o.b. Birmingham	3.35c.
No. 24, f.o.b. cars dock Pacific ports	3.80c.
No. 24, wrought iron, Pittsburgh	4.95c.

Long Ternes

No. 24, unassorted 8-lb. coating f.o.b. Pittsburgh	3.50c.
F.o.b. Gary	3.60c.
F.o.b. cars dock Pacific ports	4.20c.

Vitreous Enameling Stock

No. 20, f.o.b. Pittsburgh	3.05c.
No. 20, f.o.b. Gary	3.15c.
No. 20, f.o.b. Birmingham	3.65c.
No. 20, f.o.b. cars dock Pacific ports	3.65c.

Tin Mill Black Plate

No. 28, f.o.b. Pittsburgh	2.75c.
No. 28, Gary	2.85c.
No. 28, cars dock Pacific ports	3.35c.

Tin Plate

	Base per Box
Standard cokes, f.o.b. Pittsburgh district mill	$5.25
Standard cokes, f.o.b. Gary	5.35
Standard cokes, f.o.b. cars dock Pacific ports	5.90

Terne Plate

(F.o.b. Pittsburgh)

(Per Package, 20 x 28 in.)

8-lb. coating I.C.	$10.00
15-lb. coating I.C.	12.00
20-lb. coating I.C.	13.00
25-lb. coating I.C.	14.00
30-lb. coating I.C.	15.25
40-lb. coating I.C.	17.50

Hot-Rolled Hoops, Bands, Strips and Flats under ¼ In.

	Base per Lb.
All widths up to 24 in., P'gh.	1.95c.
All widths up to 24 in., Chicago	2.05c.
All widths up to 24 in., del'd Detroit	2.15c.
All widths up to 24 in., Birmingham	2.10c.
Cooperage stock, Pittsburgh	2.05c.
Cooperage stock, Chicago	2.15c.

Cold-Rolled Strips*

	Base per Lb.
F.o.b. Pittsburgh	2.60c.
F.o.b. Cleveland	2.60c.
Del'd Chicago	2.895c.
F.o.b. Worcester	2.80c.

* Carbon 0.25 and less.

Cold-Rolled Spring Steel

	Pittsburgh and Cleveland	Worcester
Carbon 0.25-0.50%	2.60c.	2.80c.
Carbon .51- .75	3.45c.	3.65c.
Carbon .76-1.00	4.95c.	5.15c.
Carbon Over 1.00	6.50c.	6.70c.

Fender Stock

No. 14, Pittsburgh or Cleveland	2.90c.
No. 14, Worcester	3.30c.
No. 20, Pittsburgh or Cleveland	3.30c.
No. 20, Worcester	3.70c.

WIRE PRODUCTS

(Carload lots, f.o.b. Pittsburgh and Cleveland.)

To Manufacturing Trade

	Per Lb.
Bright wire	2.40c.
Spring wire	3.05c.

Chicago prices on products sold to the manufacturing trade are $1 a ton above Pittsburgh or Cleveland. Worcester and Duluth prices are $2 a ton above, Birmingham $3 above, and Pacific Coast prices $9 a ton above Pittsburgh or Cleveland.

To the Trade

	Base per Keg
Standard wire nails	$2.10
Smooth coated nails	2.10

	Base per 100 Lb.
Annealed fence wire	$2.65
Galvanized fence wire	3.00
Polished staples	2.80
Galvanized staples	3.05
Barbed wire, galvanized	2.60
Twisted barbless wire	2.60
Woven wire fence, base column	58
Single loop bale ties, base column	51

Chicago and Anderson, Ind., mill prices are $1 a ton over Pittsburgh base (on all products except woven wire fence, for which the Chicago price is $2 above Pittsburgh); Duluth, Minn., mill prices are $2 a ton over Pittsburgh except for woven wire fence, which is $3 over Pittsburgh and Birmingham mill prices are $3 a ton over Pittsburgh.

On wire nails, barbed wire and staples, prices at Houston, Galveston and Corpus Christi, Tex., New Orleans, Lake Charles, La., and Mobile, Ala., are $6 a ton over Pittsburgh.

On nails, staples and barbed wire, prices of $6 a ton above Pittsburgh are also quoted at Beaumont and Orange, Tex.

STEEL AND WROUGHT IRON PIPE AND TUBING

Welded Pipe

Base Discounts, f.o.b. Pittsburgh District and Lorain, Ohio, Mills

F.o.b. Pittsburgh only on wrought iron pipe.

Butt Weld

Steel In.	Black	Galv.	*Wrought Iron* In.	Black	Galv.
⅛	57	37	⅛	+91½	+138
¼ to ⅜	60	44½	¼ & ⅜	+1½	+21½
½	64½	55	½	31½	15
¾	67½	59	¾	36½	20½
1 to 3	69½	61½	1 & 1¼	39½	25½
			1½	43½	28
			2	41½	26

Lap Weld

2	62	53½	2	37	22½
2½ to 3.65		56½	2½ to 3½	38	25
3½ to 6.67		58½	4 to 8	40	28½
7 & 8.66		56½	9 to 12	38	24½
9 & 10.65½		56			
11 & 12.64½		55			

Butt Weld, extra strong, plain ends

⅛	55½	42½	⅛	+13	+45½
¼ to ⅜	57½	46½	¼ & ⅜	+2½	+34½
½	62½	54½	½	32½	17½
¾	66½	58½	¾	37½	22½
1 to 3	68	61	1 to 2	43½	29

Lap Weld, extra strong, plain ends

2	60	52½	2	40	26
2½ to 3.64		56½	2½ to 4	45½	33
3½ to 6.67½		60	4½ to 6	45	33½
7 & 8	66½	57	7 & 8	46	33
9 & 10	65½	56	9 to 12.41½		30
11 & 12	64½	55			

On butt-weld and lap-weld steel pipe jobbers are granted a discount of 5%. On less-than-carload shipments prices are determined by adding 25 and 30% and the carload freight rate to the base card.

Note—Chicago district mills have a base two points less than the above discounts. Chicago delivered base is 2½ points less. Freight is figured from Pittsburgh, Lorain, Ohio, and Chicago district mills, the billing being from the point producing the lowest price to destination.

Boiler Tubes

Seamless Steel Commercial Boiler Tubes and Locomotive Tubes

(Net base prices per 100 ft. f.o.b. Pittsburgh in carload lots)

		Cold Drawn	Hot Rolled
1 in. o.d.	13 B.W.G.	$ 8.60	$ 7.82
1¼ in. o.d.	13 B.W.G.	10.19	9.26
1½ in. o.d.	13 B.W.G.	11.26	10.23
1¾ in. o.d.	13 B.W.G.	12.81	11.64
2 in. o.d.	13 B.W.G.	14.35	13.04
2¼ in. o.d.	13 B.W.G.	16.00	14.54
2½ in. o.d.	12 B.W.G.	17.61	16.01
2¾ in. o.d.	12 B.W.G.	19.29	17.54
2¾ in. o.d.	12 B.W.G.	20.45	18.59
3 in. o.d.	12 B.W.G.	$21.45	$19.50
4½ in o.d.	10 B.W.G.	41.08	37.35
3½ in. o.d.	11 B.W.G.	27.09	24.62
4 in. o.d.	10 B.W.G.	33.60	30.54
4½ in. o.d.	10 B.W.G.	41.08	37.35
5 in. o.d.	9 B.W.G.	51.56	46.87
6 in. o.d.	7 B.W.G.	79.15	71.90

Extra for less-carload quantities:

25,000 lb. or ft. to 39,999 lb. or ft.	5 %
12,000 lb. or ft. to 24,999 lb. or ft.	12½ %
6,000 lb. or ft. to 11,999 lb. or ft.	25 %
2,000 lb. or ft. to 5,999 lb. or ft.	35 %
Under 2,000 lb. or ft.	50 %

CAST IRON WATER PIPE

Per Net Ton

*6-in. and larger, del'd Chicago.	$48.40
6-in. and larger, del'd New York	45.20
*6-in. and larger, Birmingham	40.00
6-in. and larger, f.o.b. dock, San Francisco or Los Angeles	48.00
F.o.b. dock, Seattle	48.50
F.o.b. dock, Seattle	51.50

Class "A" and gas pipe, $3 extra.
4-in. pipe is $3 a ton above 6-in.

* Prices for lots of less than 200 tons. For 200 tons and over, 6-in. and larger is $39, Birmingham, and $47.40, delivered Chicago and 4-in. pipe, $42, Birmingham, and $50.40 a ton, delivered Chicago.

BOLTS, NUTS, RIVETS, SET SCREWS

Bolts and Nuts

(F.o.b. Pittsburgh, Cleveland, Birmingham or Chicago)

	Per Cent Off List
Machine and carriage bolts: ½ in. x 6 in. and smaller	70 and 10
Larger than ½ in.	70 and 5
Lag bolts	70 and 5
Plow bolts, Nos. 1, 2, 3, and 7 heads	70 and 5
Hot-pressed nuts, blank or tapped, square	70 and 5
Hot-pressed nuts, blank or tapped, hexagon	70 and 5
C.p.c. and t. square or hex. nuts, blank or tapped	70 and 5
Semi-finished hexagon nuts, U.S.S. and S.A.E., all sizes	60, 20 and 10
Stove bolts in packages, nuts attached	75
Stove bolts in packages, with nuts separate	75 and 5
Stove bolts in bulk	82½
Tire bolts	50 and 5

On stove bolts freight is allowed to destination on 200 lb. and over.

Large Rivets

(½-in. and larger)

	Base per 100 Lb.
F.o.b. Pittsburgh or Cleveland	$3.05
F.o.b. Chicago or Birmingham	3.15

Small Rivets

(7/16-in. and smaller)

	Per Cent Off List
F.o.b Pittsburgh	70 and 5
F.o.b. Cleveland	70 and 5
F.o.b. Chicago and Birm'g'm.	70 and 5

Cap and Set Screws

(Freight allowed up to but not exceeding 65c. per 100 lbs. on lots of 200 lb. or more)

	Per Cent Off List
Milled cap screws, 1 in. dia. and smaller	80, 10 and 10
Milled standard set screws, case hardened, 1 in. dia. and smaller	75
Milled headless set screws, cut thread ¾ in. and smaller	75
Upset hex. head cap screws U.S.S. or S.A.E. thread, 1 in and smaller	85
Upset set screws, cut and oval points	75 and 10
Milled studs	65 to 65 and 10

Alloy and Stainless Steel

Alloy Steel Blooms, Billets and Slabs

F.o.b. Pittsburgh, Chicago, Canton, Massillon, Buffalo, Bethlehem.
Base price, $51 a gross ton.

Alloy Steel Bars

F.o.b. Pittsburgh, Chicago, Buffalo, Bethlehem, Massillon or Canton.
Open-hearth grade, base..... 2.55c.
Delivered price at Detroit is.. 2.70c.

S.A.E. Series Numbers	Alloy Differential per 100 lb.
2000 (1½% Nickel)	$0.25
2100 (2½% Nickel)	0.95
2300 (3½% Nickel)	1.50
2500 (5% Nickel)	2.25
3100 Nickel Chromium	0.55
3200 Nickel Chromium	1.35
3300 Nickel Chromium	3.80
3400 Nickel Chromium	3.20
4100 Chromium Molybdenum (0.15 to 0.25 Molybdenum)	0.50
4100 Chromium Molybdenum (0.25 to 0.40 Molybdenum)	0.70
4600 Nickel Molybdenum (0.20 to 0.30) Molybdenum (1.50 to 2.00 Nickel)	1.05
5100 Chromium Steel (0.60 to 0.90 Chromium)	0.35
5100 Chromium Steel (0.80 to 1.10 Chromium)	0.45
5100 Chromium Spring Steel	base
6100 Chromium Vanadium Bar	1.10c.
6100 Chromium Vanadium Spring Steel	$0.70
Chromium Nickel Vanadium	1.40
Carbon Vanadium	0.85

These prices are for hot-rolled steel bars. The differential for most grades in electric furnace steel is 50c. higher. The differential for cold-drawn bars ½c. per lb. higher with separate extras. Blooms, billets and slabs under 4x4 in. or equivalent are sold on the bar base. Slabs with a section area of 16 in. and 2½ in. thick or over take the billet base. Sections 4x4 in. to 10x10 in. or equivalent carry a gross ton price, which is the net price for bars for the same analysis. Larger sizes carry extras.

Alloy Cold-Finished Bars

F.o.b. Pittsburgh, Chicago, Gary, Cleveland or Buffalo, 3.05c. base per lb. Delivered Detroit, 3.20c.

STAINLESS STEEL No. 302

(17 to 19% Cr, 7 to 9% Ni, 0.08 to 0.20% C.)

(Base Prices f.o.b. Pittsburgh)

	Per Lb.
Forging billets	19.55c.
Bars	23c.
Plates	26c.
Structural shapes	23c.
Sheets	33c.
Hot-rolled strip	20¾c.
Cold-rolled strip	27c.
Drawn wire	23c.

TOOL STEEL

	Base per Lb.
High speed	57½c.
High carbon chrome	37c.
Oil hardening	21c.
Special	19c.
Extra	15¾c.
Regular	12½c.

Prices for warehouse distribution to all points on or East of Mississippi River are 2c. a lb. higher. West of Mississippi quotations are 3c. a lb. higher.

British and Continental

BRITISH

Per Gross Ton
f.o.b. United Kingdom Ports

Based on exchange rate as of July 27

Ferromanganese, export	$45.24
Billets, open-hearth	29.57 to $30.83
Tin plate, per base box	4.77 to 4.80
Steel bars, open-hearth	39.58
Beams, open-hearth	38.33
Channels, open-hearth	39.58
Angles, open-hearth	38.33
Black sheets, No. 24 gage	51.42
Galvanized sheets, No. 24 gage	61.45

CONTINENTAL

Per Metric Ton, f.o.b. Continental Ports

Based on Exchange rate of July 27

Billets, Thomas	$19.27
Wire rods, No. 5 B.W.G.	36.90
Steel bars, merchant	26.64
Sheet bars	19.68
Plate, ¼ in. and up	35.42
Plate, 3/16 in. and 5 mm.	34.85
Sheets, ⅛ in.	36.90
Beams, Thomas	25.58
Angles (Basic)	25.58
Hoops and strip base	32.79
Wire, plain, No. 8	44.03
Wire nails	47.15
Wire, barbed, 4 pt. No. 10 B.W.G.	71.74

IRON AND STEEL WAREHOUSE PRICES

PITTSBURGH

Base per Lb.

Plates	3.25c.
Structural shapes	3.25c.
Soft steel bars and small shapes	3.05c.
Reinforcing steel bars	3.05c.
Cold-finished and screw stock:	
Rounds and hexagons	3.50c.
Squares and flats	3.50c.
Hot rolled strip incl. 3/16 in. thick, under 24 in. wide	3.30c.
Hoops and bands under ¼ in.	3.80c.
Hot-rolled annealed sheets (No. 24), 25 or more bundles	3.35c.
Galv. sheets (No. 24), 25 or more bundles	4.05c.
Hot-rolled sheets (No. 10)	3.05c.
Galv. corrug. sheets (No. 28), per square (more than 3750 lb.)	$3.77
Spikes, large	3.10c.

Per Cent Off List

Track bolts, all sizes, per 100 count	60
Machine bolts, 100 count	65-5
Carriage bolts, 100 count	65-5
Nuts, all styles, 100 count	65-5
Large rivets, base per 100 lb.	$3.65
Wire, black, soft ann'l'd, base per 100 lb.	2.90c.
Wire, galv. soft, base per 100 lb.	3.25c.
Common wire nails, per keg	2.35c.
Cement coated nails, per keg.	2.35c.

On plates, structurals, bars, reinforcing bars, bands, hoops and blue annealed sheets, base applies to orders of 400 to 9999 lb.

*Delivered in Pittsburgh switching district.

CHICAGO

Base per Lb.

Plates and structural shapes	3.30c.
Soft steel bars, rounds	3.10c.
Soft steel bars, squares and hexagons	3.25c.
Cold-fin. steel bars:	
Rounds and hexagons	3.65c.
Flats and squares	3.65c.
Hot-rolled strip	3.40c.
Hot-rolled annealed sheets (No. 24)	3.95c.
Galv. sheets (No. 24)	4.65c.
Spikes (keg lots)	3.70c.
Track bolts (keg lots)	4.70c.
Rivets, structural (keg lots)	3.80c.
Rivets, boiler (keg lots)	3.90c.

Per Cent Off List

Machine bolts	*65
Carriage bolts	*65
Lag screws	*65
Hot-pressed nuts, sq. tap or blank	*65
Hot-pressed nuts, hex. tap or blank	*65
Hex. head cap screws	87½
Cut point set screws	75 and 10
Flat head bright wood screws	70
Spring cotters	55
Stove bolts in full packages	70
Rd. hd. tank rivets, 7/16 in. and smaller	57½
Wrought washers	$4.50 off list
Black ann'l'd wire per 100 lb.	$3.95
Com. wire nails, 50 kegs or more	2.40c.†
Cement c't'd nails, 50 kegs or more	2.40c.†

On plates, shapes, bars, hot-rolled strip and heavy hot-rolled sheets, the base applies on orders of 400 to 9999 lb. All prices are f.o.b. consumers' plants wihtin the Chicago switching district.

*These are quotations delivered to city trade for quantities of 100 lb. or more. For lots of less than 100 lb., the quotation is 65 per cent off. Discounts applying to country trade are 70 per cent off, f.o.b. Chicago, with full or partial freight allowed up to 50c. per 100 lb.

†Prices for city and suburbs only.

NEW YORK

Base per Lb.

Plates, ¼ in. and heavier	3.50c.
Structural shapes	3.47c.
Soft steel bars, rounds	3.41c.
Iron bars, Swed. charcoal	6.75c. to 7.00c.
Cold-fin. shafting and screw stock:	
Rounds and hexagons	3.96c.
Flats and squares	3.96c.
Cold-rolled; strip, soft and quarter hard	3.36c.
Hoops	3.66c.
Bands	3.66c.
Hot-rolled sheets (No. 10)	3.15c. to 3.41c.
Hot-rolled ann'l'd sheets (No. 24*)	3.75c. to 3.99c.
Galvanized sheets (No. 24*)	4.10c. to 4.50c.
Long terne sheets (No. 24)	5.25c. to 5.35c.
Standard tool steel	11.25c.
Wire, black annealed (No. 9)	3.50c.
Wire, galv. (No. 9)	3.85c.
Tire steel, 1 x ½ in. and larger	3.75c.
Open-hearth spring steel	4.00c. to 10.00c.
Common wire nails, base per keg	$3.21

Per Cent Off List

Machine bolts, square head and nut:	
All diameters	65 and 10
Carriage bolts, cut thread:	
All diameters	65 and 10

Per 100 Ft.

Boiler tubes:	
Lap welded, 2-in.	$18.05
Seamless welded, 2-in.	19.24
Charcoal iron, 2-in.	24.94
Charcoal iron, 4-in.	63.65

*No. 28 and lighter, 36 in. wide, 20c. higher per 100 lb.

ST. LOUIS

Base per Lb.

Plates and struc. shapes	3.55c.
Bars, soft steel (rounds and flats)	3.35c.
Bars, soft steel (squares, hexagons, ovals, half ovals and half rounds)	3.50c.
Cold-fin. rounds, shafting, screw stock	3.90c.
Hot-rolled annealed sheets (No. 24)	4.20c.
Galv. sheets (No. 24)	4.90c.
Hot-rolled sheets (No. 10)	3.40c.
Black corrug. sheets (No. 24)	4.20c.
*Galv. corrug. sheets	4.90c.
Structural rivets	4.00c.
Boiler rivets	4.10c.

Per Cent Off List

Tank rivets, 7/16 in. and smaller.	55
Machine and carriage bolts, lag screws, fitting up bolts, bolt ends, plow bolts, hot-pressed nuts, square and hexagon, tapped or blank, semi-finished nuts; all quantities	70

*No. 26 and lighter take special prices.

PHILADELPHIA

Base per Lb.

*Plates, ¼-in. and heavier	3.10c.
*Structural shapes	3.10c.
*Soft steel bars, small shapes, iron bars (except bands)	3.15c.
‡Reinforc. steel bars, sq. twisted and deformed	2.96c.
Cold-finished steel bars	3.91c.
*Steel hoops	3.55c.
*Steel bands, No. 12 and 3/16 in. incl.	3.30c.
Spring steel	5.00c.
†Hot-rolled anneal. sheets (No. 24)	3.75c.
†Galvanized sheets (No. 24)	4.50c.
*Hot-rolled annealed sheets (No. 10)	3.20c.
Diam. pat. floor plates, ¼ in.	5.05c.
Swedish iron bars	6.25c.

These prices are subject to quantity differential except on reinforcing and Swedish iron bars.

*Base prices subject to deduction on orders aggregating 4000 lb. or over.

†For 25 bundles or over.

‡For less than 2000 lb.

CLEVELAND

Base per Lb.

Plates and struc. shapes	3.31c.
Soft steel bars	3.00c.
Reinforc. steel bars	2.10c.
†Cold-finished steel bars	3.65c.
Flat-rolled steel under ¼ in.	3.36c.
Cold-finished strip	†3.00c.
Hot-rolled annealed sheets (No. 24)	3.91c.
Galvanized sheets (No. 24)	4.61c.
Hot-rolled sheets (No. 10)	3.11c.
Hot-rolled 3/16 in. 24 to 48 in. wide sheets	3.56c.
*Black ann'l'd wire, per 100 lb.	$2.40
*No. 9 galv. wire, per 100 lb.	2.75
*Com. wire nails, base per keg	2.35

†Outside delivery 10c. less.

*For 5000 lb. or less.

CINCINNATI

Base per Lb.

Plates and struc. shapes	3.52c.
Bars, rounds, flats and angles.	3.32c.
Other shapes	3.47c.
Rail steel reinforc. bars	3.25c.
Hoops and bands, 3/16 in. and lighter	3.57c.
Cold-finished bars	3.87c.
Hot-rolled annealed sheets (No. 24) 25 bundles or more.	4.62c.
Galv. sheets (No. 24) 500 lb. or less	4.47c.
Galvanized sheets (No. 24) over 3500 lb.	4.07c.
Hot-rolled sheets (No. 10)	3.32c.
Structural rivets	4.50c.
Small rivets	55 per cent off list
No. 9 ann'l'd wire, per 100 lb. (1000 lb. or over)	$2.88
Com. wire nails, base per keg:	
Any quantity less than carload.	3.04
Cement c't'd nails, base 100-lb keg	3.50
Chain. lin. per 100 lb.	8.35

Net per 100 Ft.

Seamless steel boiler tubes, 2-in.	$20.37
4-in.	48.14
Lap-welded steel boiler tubes, 2-in.	19.38
4-in.	45.32

BUFFALO

Base per Lb.

Plates	3.48c.
Struc. shapes	3.35c.
Soft steel bars	3.15c.
Reinforcing bars	2.60c.
Cold-fin. flats and sq.	3.70c.
Rounds and hex.	3.70c.
Cold-rolled strip steel	3.19c.
Hot-rolled annealed sheets (No. 24)	4.16c.
Heavy hot-rolled sheets (3/16 in., 24 to 48 in. wide)	3.53c.
Galv. sheet (No. 24)	4.80c.
Bands	3.53c.
Hoops	3.53c.
Heavy top-rolled sheets	3.28c.
Com. wire nails, base per keg.	$2.85
Black wire, base per 100 lb. (2500-lb. lots or under)	4.00
(Over 2500 lb.)	3.90

BOSTON

Base per Lb.

Beams, channels, angles, tees, zees	3.54c.
H beams and shapes	3.54c.
Plates — Sheared, tank, and univ. mill, ¼ in. thick and heavier	3.56c.
Floor plates, diamond pattern	5.36c.
Bar and bar shapes (mild steel)	3.45c.
Bands 3/16 in. thick and No. 12 ga. incl.	3.65c. to 4.65c.
Half rounds, half ovals, ovals and bevels	4.70c.
Tire steel	4.70c.
Cold-rolled strip steel	3.245c.
Cold-finished rounds, squares and hexagons	3.90c.
Cold-finished flats	3.90c.
Blue annealed sheets, No. 10 ga.	3.65c.
One pass cold-rolled sheets No. 24 ga.	4.20c.
Galvanized steel sheets, No. 24 ga.	4.00c.
Lead coated sheets, No. 24 ga.	5.85c.

Price delivered by truck in metropolitan Boston, subject to quantity differentials.

DETROIT

	Base per Lb.
Soft steel bars	3.19c.
Structural shapes	3.52c.
Plates	3.52c.
Floor plates	5.27c.
Hot-rolled annealed sheets (No. 24)*	4.04c.
Hot-rolled sheets (No. 10)**	3.24c.
Galvanized sheets (No. 24)	4.82c.
Bands	3.49c.
Hoops	3.49c.
†Cold-finished bars	3.74c.
Cold-rolled strip	3.18c.
Hot-rolled alloy steel (S.A.E. 3100 Series)	5.44c.
Bolts and nuts, in cases, 70 and 10 per cent off list	
Broken cases	70 per cent off

Prices delivered by truck in metropolitan Detroit, subject to quantity differentials covering shipment at one time.

* Base less 0.25c., 3500 lb. and over. Add 0.50c. per hundred lb. for broken bundles.

** Base less 0.25c., 1500 to 3749 lbs.; less 0.50c., 3750 to 7499 lb.; less 0.75c., 7500 lb. and over.

Galvanized and hot-rolled annealed may not be combined to obtain quantity deductions.

Country territory to be equalized on the Chicago plan.

MILWAUKEE

	Base per Lb.
Plates and structural shapes	3.41c.
Soft steel bars, rounds up to 8 in., flats and fillet angles	3.21c.
Soft steel bars, squares and hexagons	3.36c.
Hot-rolled strip	3.51c.
Hot-rolled sheets (No. 10)	3.16c.
Hot-rolled annealed sheets (No. 24)	4.06c.
Galvanized sheets (No. 20)	4.76c.
Cold-finished steel bars	3.61c.
Cold-rolled strip	3.38c.
Structural rivets (keg lots)	3.91c.
Boiler rivets, cone head (keg lots)	4.01c.
Track spikes (keg lots)	3.81c.
Track bolts (keg lots)	4.81c.
Black annealed wire	4.06c.
Com. wire nails	2.60c.
Cement coated nails	2.60c.

	Per Cent Off List
Machine bolts, carriage bolts and lag screws	70 to 75
Hot-pressed nuts, sq. and hex. tapped or blank (keg lots)	70

Prices given above are delivered Milwaukee.

On plates, shapes, bars, hot-rolled strip and heavy hot-rolled sheets, the base applies on orders of 400 to 9999 lb. On galvanized and No. 24 hot-rolled annealed sheets the prices given apply on orders of 400 to 1500 lb. On cold-finished bars the prices are for orders of 1000 lb. or more of a size.

ST. PAUL

	Base per Lb.
Mild steel bars, rounds	3.35c.
Structural shapes	3.55c.
Plates	3.55c.
Cold-finished bars	3.90c.
Bands and hoops	3.65c.
Hot-rolled annealed sheets, No. 24	4.20c.
Galvanized sheets, No. 24	4.90c.

On mild steel bars, shapes, plates and hoops and bands the base applies on 400 to 14,999 lb. On hot-rolled sheets, galvanized sheets and cold-rolled sheets base applies on 15,000 lb. and over. Base on cold-finished bars is 1000 lb. and over of a size.

BALTIMORE

	Base per Lb.
*Mild steel bars	3.00c.
**Reinforcing bars	2.85c.
*Structural shapes	3.00c.
†Plates	3.00c.
†Hot-rolled sheets, No. 10	3.10c.
‡Hot-rolled annealed sheets, No. 24	3.60c.
‡Galvanized sheets, No. 24	4.30c.
*Bands	3.20c.
*Hoops	3.45c.
§Cold-rolled rounds	3.73c.
§Cold-rolled squares, hex. and flats	3.73c.
Rivets	4.40c.
Bolts and nuts, per cent off list	60 and 10

*Quantity extras per size apply.

†Quantity extras per thickness apply.

Hot-rolled quantity extras are: 2000 lb. and over, base: 1500 lb. to 1999 lb. add 15c. per 100 lb.; 1000 lb. to 1499 lb. add 30c.; 0 to 999 lb., add 50c.

‡25 bundles and over, base. For 1 to 9 bundles add 50c. per 100 lb.; for 10 to 24 bundles add 25c.

§Base for 1000 lb. and over. For 500 to 999 lb. add 25c. per 100 lb.; for 300 to 499 lb. add $1.00; for 0 to 299 lb. add $1.75; for combined order under 100 lb. add $3.00.

**For orders 4000 lb. to 9999 lb. Add 15c. per 100 lb. for orders 2000 to 3999 lb.; add 65c. for orders less than 2000 lb.

CHATTANOOGA

	Base per Lb.
Mild steel bars	3.46c.
Iron bars	3.46c.
Reinforcing bars	3.46c.
Structural shapes	3.66c.
Plates	3.66c.
Hot-rolled sheets No. 10	3.46c.
Hot-rolled annealed sheets No. 24*	3.41c.
Galvanized sheets, No. 24*	3.96c.
Steel bands	3.71c.
Cold-finished bars	4.281c.

* Plus mill item extra.

MEMPHIS

	Base per Lb.
Mild steel bars	3.57c.
Shapes, bar size	3.57c.
Iron bars	3.57c.
Structural shapes	3.77c.
Plates	3.77c.
Hot-rolled sheets, No. 10	3.57c.
Hot-rolled annealed sheets, No. 24	4.37c.
Galvanized sheets, No. 24	4.90c.
Steel bands	3.82c.
Cold-drawn rounds	4.04c.
Cold-drawn flats, squares, hexagons	6.04c.
Structural rivets	4.25c.
Bolts and nuts, per cent off list	65
Small rivets, per cent off list	50

NEW ORLEANS

	Base per Lb.
Mild steel bars	3.35c.
Reinforcing bars	3.50c.
Structural shapes	3.55c.
Plates	3.55c.
Hot-rolled sheets, No. 10	3.55c.
Hot-rolled annealed sheets, No. 24	4.35c.
Galvanized sheets, No. 24	4.95c.
Steel bands	3.95c.
Cold-finished steel bars	4.30c.
Structural rivets	4.25c.
Boiler rivets	4.25c.
Common wire nails, base per keg	$2.65
Bolts and nuts, per cent off list	70

PACIFIC COAST

	Base per Lb. San Francisco	Los Angeles	Seattle
Plates, tank and U. M.	3.25c.	3.60c.	3.65c.
Shapes, standard	3.25c.	3.60c.	3.65c.
Soft steel bars	3.25c.	3.60c.	3.80c.
Reinforcing bars, f.o.b. cars dock Pacific ports	2.45c.	2.45c.	2.45c.
Hot-rolled annealed sheets (No. 24)	4.10c.	4.35c.	4.50c.
Hot-rolled sheets (No. 10)	3.35c.	3.70c.	3.85c.
Galv. sheets (No. 24 and lighter)	4.50c.	4.40c.	5.10c.
Galv. sheets (No. 22 and heavier)	5.00c.	4.60c.	5.10c.
Cold finished steel			
Rounds	5.80c.	5.85c.	6.15c.
Squares and hexagons	7.05c.	7.10c.	7.40c.
Flats	7.55c.	7.60c.	8.40c.
Common wire nails—base per keg less carload	$2.90	$2.90	$2.90

All items subject to differentials for quantity.

REFRACTORIES PRICES

Fire Clay Brick

	Per 1000 f.o.b. Works
High-heat duty, Pennsylvania, Maryland, Kentucky, Missouri and Illinois	$45.00
High-heat duty, New Jersey	50.00
High-heat duty, Ohio	40.00
Intermediate, Pennsylvania, Maryland, Kentucky, Missouri and Illinois	40.00
Intermediate, New Jersey	43.00
Intermediate, Ohio	35.00
Ground fire clay, per ton	7.00

Silica Brick

	Per 1000 f.o.b. Works
Pennsylvania	$45.00
Chicago District	54.00
Birmingham	$48.00 to 50.00
Silica cement per net ton	8.00

Chrome Brick

	Per Net Ton
Standard f.o.b Baltimore, Plymouth Meeting and Chester	$45.00
Chemically bonded f.o.b. Baltimore, Plymouth Meeting and Chester, Pa.	45.00

Magnesite Brick

	Per Net Ton
Standard, f.o.b. Baltimore and Chester, Pa.	$65.00
Chemically bonded, f.o.b. Baltimore	55.00

Grain Magnesite

	Per Net Ton
Imported, f.o.b. Baltimore and Chester, Pa. (in sacks)	$45.00
Domestic, f.o.b. Baltimore and Chester, in sacks	40.00
Domestic, f.o.b. Chewelah, Wash.	22.00

RAW MATERIALS PRICES

PIG IRON

No. 2 Foundry

F.o.b. Everett, Mass.; Bethlehem, Birdsboro and Swedeland, Pa., and Sparrows Point, Md.	$20.50
Delivered Brooklyn	22.9289
Delivered Newark or Jersey City	21.9873
Delivered Philadelphia	21.3132
F.o.b. Neville Island, Sharpsville and Erie, Pa.; Buffalo; Youngstown, Cleveland, Toledo and Hamilton, Ohio; Detroit; Chicago and Granite City, Ill.	19.50
F.o.b. Jackson, Ohio	21.25
Delivered Cincinnati	20.5807
F.o.b. Duluth	20.00
F.o.b. Provo, Utah	17.50
Delivered San Francisco, Los Angeles or Seattle	22.315
F.o.b. Birmingham*	15.50

* Delivered prices on southern iron for shipment to northern points are 38c. a ton below delivered prices from nearest northern basing point.

Malleable

Base prices on malleable iron are 50c. a ton above No. 2 foundry quotations at Everett, Eastern Pennsylvania furnaces, Erie and Buffalo. Elsewhere they are the same.

Basic

F.o.b. Everett, Mass.; Bethlehem, Birdsboro, Swedeland and Steelton, Pa., and Sparrows Point, Md.	$20.00
Delivered Boston Switching District	20.50
Delivered Newark or Jersey City	21.4873
Delivered Philadelphia	20.8132
F.o.b. Buffalo	18.50
F.o.b. Neville Island, Sharpsville and Erie, Pa.; Youngstown, Cleveland, Toledo and Hamilton, Ohio; Detroit; Chicago and Granite City, Ill.	19.00
Delivered Cincinnati	20.0807
Delivered Canton, Ohio	20.3482
Delivered Mansfield, Ohio	20.8832
F.o.b. Jackson, Ohio	20.75
F.o.b. Provo, Utah	17.00
F.o.b. Birmingham	14.50

Bessemer

F.o.b. Everett, Mass.; Bethlehem, Birdsboro and Swedeland, Pa.	$21.50
Delivered Boston Switching District	22.00
Delivered Newark or Jersey City	22.9873
Delivered Philadelphia	22.3132
F.o.b. Buffalo and Erie, Pa., and Duluth	20.50
F.o.b. Neville Island and Sharpsville, Pa.; Youngstown, Cleveland, Toledo and Hamilton, Ohio; Detroit; Chicago and Birmingham	20.00
Delivered Cincinnati	21.0807
Delivered Canton, Ohio	21.3482
Delivered Mansfield, Ohio	21.8832

Low Phosphorus

Basing points: Birdsboro, Pa., Steelton, Pa., and Standish, N. Y.	$24.00

Gray Forge

Valley or Pittsburgh furnace	$19.00

Charcoal

Lake Superior furnace	$22.00
Delivered Chicago	25.2528

Canadian Pig Iron

Per Gross Ton

Delivered Toronto.

No. 1 fdy., sil. 2.25 to 2.75	$21.00
No. 2 fdy., sil. 1.75 to 2.75	20.50
Malleable	22.50

Delivered Montreal

No. 1 fdy., sil. 2.25 to 2.75	$22.50
No. 2 fdy., sil. 1.75 to 2.25	22.00
Malleable	22.50
Basic	22.00

FERROALLOYS

Ferromanganese

F.o.b. New York, Philadelphia, Baltimore, Mobile or New Orleans.

Per Gross Ton

Domestic, 80% (carload)	$75.00

Spiegeleisen

Per Gross Ton Furnace

Domestic, 19 to 21%	$26.00
50-ton lots 3-mo. shipment	24.00
F.o.b. New Orleans	26.00

Electric Ferrosilicon

Per Gross Ton Delivered

50% (carloads)	$69.50
50% (ton lots)	77.00
75% (carloads)	126.00
75% (ton lots)	130.00

Silvery Iron

Per Gross Ton

F.o.b. Jackson, Ohio, 6.00 to 6.50%	$22.75

For each additional 0.5% silicon up to 12%, 50c. a ton is added.

The lower all-rail delivered price from Jackson or Buffalo is quoted with freight allowed. Base prices at Buffalo are $1.25 a ton higher than at Jackson.

Manganese 2 to 3%, $1 a ton additional. For each unit of manganese over 3%, $1 a ton additional. Phosphorus 0.75% or over, $1 a ton additional.

Bessemer Ferrosilicon

F.o.b. Jackson, Ohio, Furnace

Per Gross Ton

10.00 to 10.50%	$27.75
10.51 to 11.00%	28.25
11.00 to 11.50%	28.75
11.51 to 12.00%	29.25
12.01 to 12.50%	29.75
12.51 to 13.00%	30.25
13.01 to 13.50%	30.75
13.51 to 14.00%	31.25
14.01 to 14.50%	31.75
14.51 to 15.00%	32.25
15.01 to 15.50%	32.75
15.51 to 16.00%	33.25
16.01 to 16.50%	33.75
16.51 to 17.00%	34.25

Manganese 2 to 3%, $1 a ton additional. For each unit of manganese over 3%, $1 a ton additional. Phosphorus 0.75% or over, $1 a ton additional.

Base prices at Buffalo are $1.25 a ton higher than at Jackson.

Other Ferroalloys

Ferrotungsten, per lb. contained W del., carloads	$1.30
Ferrotungsten, lots of 5000 lb.	1.35
Ferrotungsten, smaller lots	1.40
Ferrochromium, 4 to 6% carbon and up, 65 to 70% Cr per lb. contained Cr delivered, in carloads, and contract	10.00c.
Ferrochromium, 2% carbon	16.50c. to 17.00c.
Ferrochromium, 1% carbon	17.50c. to 18.00c.
Ferrochromium, 0.10% carbon	19.50c. to 20.00c.
Ferrochromium, 0.06% carbon	20.00c. to 20.50c.
Ferrovanadium, del. per lb. contained V.	$2.70 to $2.90
Ferrocolumbium, per lb. contained columbium, f.o.b. Niagara Falls, N. Y.	$2.50
Ferrocarbontitanium, 15 to 18% Ti, 7 to 8% C, f.o.b. furnace carload and contract per net ton	$137.50
Ferrocarbontitanium, 17 to 20% Ti, 3 to 5% C, f.o.b. furnace, carload and contract, per net ton	142.50
Ferrophosphorus, electric, or blast furnace material, in carloads, f.o.b. Anniston, Ala., for 18%, with $3 unitage, freight equalized with Rockdale, Tenn., per gross ton	58.50
Ferrophosphorus, electric, 24%, in carlots, f.o.b. Anniston, Ala., per gross ton with $3 unitage, freight equalized with Nashville, Tenn.	75.00
Ferromolybdenum, per lb. Mo del.	95c.
Calcium molybdate, per lb. Mo del.	80c.
Silico spiegel, per ton, f.o.b. furnace, carloads	$38.00
Ton lots or less, per ton	45.50
Silico-manganese, gross ton, delivered.	
2.50% carbon grade	85.00
2% carbon grade	90.00
1% carbon grade	100.00

Note: Spot prices are $5 a ton higher except on 75 per cent ferrosilicon on which premium is $10 a ton.

ORES

Lake Superior Ores

Delivered Lower Lake Ports

Per Gross Ton

Old range, Bessemer, 51.50%	$4.80
Old range, non-Bessemer, 51.50%	4.65
Mesabi, Bessemer, 51.50%	4.65
Mesabi, non-Bessemer, 51.50%	4.50
High phosphorus, 51.50%	4.40

Foreign Ore

C.i.f. Philadelphia or Baltimore

Per Unit

Iron, low phos., copper free, 55 to 58% dry Spain or Algeria	10.25c.
Iron, low phos., Swedish, average, 68½% iron	10.25c.
Iron, basic or foundry, Swedish, aver. 65% iron	9.50c.
Iron, basic or foundry, Russian, aver. 65% iron	Nominal
Man., Caucasian, washed 52%	26c.
Man., African, Indian, 44-48%	25c.
Man., African, Indian, 49-51%	26c.
Man., Brazilian, 46 to 48½%	24c.

Per Net Ton Unit

Tungsten, Chinese, wolframite, duty paid, delivered, nominal	16.00
Tungsten, domestic, scheelite delivered, nominal	16.00

Per Gross Ton

Chrome, 45% Cr_2O_3, lump, c.i.f. Atlantic Seaboard (African)	$17.50
45 to 46% Cr_2O_3 (Turkish)	$16.50 to 17.00
48% Cr_2O_3 (African)	20.50
48% min. Cr_2O_3 (Turkish)	19.25
Chrome concentrate, 50% and over Cr_2O_3, c.i.f. Atlantic ports	22.00
52% Cr_2O_3 (Turkish)	21.75
48 to 49% Cr_2O_3 (Turkish)	19.25

FLUORSPAR

Per Net Ton

Domestic, washed gravel, 85-5, f.o.b. Kentucky and Illinois mines, all rail	$18.00 to $20.00
Domestic, barge and rail	19.00
No. 2 lump, 85-5, f.o.b. Kentucky and Illinois mines	20.00
Foreign, 85% calcium fluoride, not over 5% silicon, c.i.f. Atlantic ports, duty paid	21.50
Domestic No. 1 ground bulk, 95 to 98% calcium fluoride, not over 2½% silicon, f.o.b. Illinois and Kentucky mines	35.00

FUEL OIL

Per Gal.

F.o.b. Bayonne or Baltimore, No. 3 distillate	4.25c.
F.o.b. Bayonne or Baltimore, No. 4 industrial	3.75c.
Del'd Ch'go, No. 3 industrial	5.00c.
Del'd Ch'go, No. 5 industrial	3.77c.
Del'd Cleve'd, No. 3 distillate	5.87½c.
Del'd Cleve'd, No. 4 industrial	5.75c.
Del'd Cleve'd, No. 5 industrial	5.00c.

COKE AND COAL

Coke

Per Net Ton

Furnace, f.o.b. Connellsville Prompt	$3.50 to $3.65
Foundry, f.o.b. Connellsville Prompt	4.00 to 5.75
Foundry, by-product, Chicago ovens	9.00
Foundry, by-product, del'd New England	11.50
Foundry, by-product, del'd Newark or Jersey City	9.65
Foundry, by-product, Philadelphia	9.38
Foundry, by-product, delivered Cleveland	9.75
Foundry, by-product, delivered Cincinnati	9.50
Foundry, Birmingham	6.50
Foundry, by-product, St. Louis, f.o.b. ovens	8.00
Foundry, from Birmingham, f.o.b. cars docks, Pacific ports	14.75

Coal

Per Net Ton

Mine run steam coal, f.o.b. W. Pa. mines	$1.50 to $1.75
Mine run coking coal, f.o.b. W. Pa.	1.75 to 1.90
Gas coal, ¾-in. f.o.b. Pa. mines	2.00 to 2.25
Mine run gas coal, f.o.b. Pa. mines	1.80 to 2.00
Steam slack, f.o.b. W. Pa. mines	1.00 to 1.25
Gas slack, f.o.b. W. Pa. mines	1.20 to 1.45

THIS WEEK'S MACHINE . . .TOOL ACTIVITIES. . .

. . . Machine tools in good summer demand.

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. . . Buying of steel equipment continues.

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. . . Drought results may delay buying in affected areas.

By L. M. WAITE

UNUSUAL summer buying continues to hold the spotlight on machine tools to an extent covering practically every type of shop machine and extending into many lines of auxiliary equipment.

The week's purchases of steel mill equipment are indicative of sustained interest in that industry. Manufacturers of refrigerator units for home use are said to be facing capacity-testing demand, which may require that their well-organized production lines be further augmented. The revived call for bicycles is resulting in some nice machine tool business.

Railroads are attentive to presentations covering the range of machines particularly adapted for use in more quickly disposing of maintenance jobs. The need for new rolling stock is pressing. The extent to which drought conditions may delay development of plans, particularly among Western railroads, remains to be seen.

There is a possibility, perhaps probability, that drought conditions may serve to slow up buying activity among manufacturers of agricultural implements, who have been giving considerable thought to the advantages of line production.

The automotive industry shows little, if any, intention of resting on its oars so far as new equipment is concerned. There is substantial activity in die casting machines. Production from plastic materials features a heavy call for the equipment employed in that work. Manufacturers of airplanes have been carefully studying modern offerings of machines adapted to their work.

New York

Dealers and direct representatives express general satisfaction with conditions. Taken by weeks, with individual sellers there is an up-and-down tendency, but the total July business is expected to compare favorably with June. E. W. Bliss Co., Brooklyn, received a $500,000 order from the United States Steel Corp. for steel mill equipment.

Chicago

International Harvester Co., has finished purchases for line production at its Fort Wayne, Ind., plant and is now buying on a similar plan for its Rock Island, Ill., plant. Allis-Chalmers Mfg. Co., has made no further outward progress with its plan to increase production at Springfield, Ill. This project necessitates the erection of a new building and dealers feel that this may be the reason for slowness of inquiry. Another factor, about which farm implement manufacturers say very little, but which may be rather vital in their consideration of plans, is the drought and its unmeasured effect upon farmer purchasing power. The drought may also have rather telling effects upon the machine tool purchases of some of the Western railroads.

Dealers report varying conditions of sales. Some find the July movement equal to June and others report that buying is lower, largely due to the vacation season, but that interest is still holding. All dealers agree that the outlook is excellent.

Cincinnati

Summer influences retarded machine tool demand slightly, the past week. Bookings, nevertheless, were at better than normal seasonal rate and manufacturers anticipate steady ordering throughout the remainder of the summer.

Light lathes, millers and grinders are prominent in current business, while shapers, boring mills and drills are in fair demand. Planers are still sluggish, consumers hesitating at the financial burden of heavy tools. As a result, contract planing work is steadily brisk and local shops are operating at a good rate on job work.

Cleveland

While demand for machine tools has tapered off somewhat, business is fully as good as had been expected for the mid-summer period. Sales of turret lathes, while lighter than in June, are about as numerous as through the first quarter. Automatic screw machines are moving nearly as well as last month. Machinery orders, which are largely diversified, are confined mostly to single tools. Foreign inquiry is not as active as recently. Machine tool builders are optimistic regarding the outlook for sales during the latter part of the current quarter.

Detroit

Dealers continue to find inquiries very active, despite a slight let-up in orders placed as the end of program work is reached. Few dull moments are expected for the next month, however, as automobile plants press for deliveries on machines ordered some months ago. Recent hot weather further aggravated the serious delivery situation in that many shops were forced to half-day operation.

Pacific Coast

The machine tool order situation continues favorable as a whole despite a general machinists' strike in the Oakland district. Some 2500 employees are involved, and, as there is a considerable order backlog in a number of the shops on strike, the effect may be somewhat widely felt. The combination of a strike without stated grievances and a delayed deliveries condition on machine tools creates a guesswork situation as to probability of immediate orders from the Oakland district.

PLANT EXPANSION AND EQUIPMENT BUYING

. . . Studebaker-Pacific Corp., Los Angeles, has let contract for an addition to cost about $1,000,000 with equipment.

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. . . Inland Mfg. Co., Dayton, Ohio, has placed contract for an extension costing $350,000 complete.

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. . . Landers, Frary & Clark, New Britain, Conn., have awarded contract for an addition to cost, with equipment, about $200,000.

NORTH ATLANTIC

Union Bag & Paper Corp., Woolworth Building, New York, has let general contract to Merritt-Chapman & Scott Corp., 17 Battery Place, for additional units at new kraft pulp and paper mill at Hermitage Plantation, Savannah, Ga., for which work on initial buildings is being completed by same contractor. Output will be practically doubled with structures now to be built. New work will cost about $2,750,000 with equipment, developing total plant investment in excess of $6,500,000. George F. Hardy, 309 Broadway, New York, is consulting engineer.

Bedford Boat Building Co., 342 East Thirty-fourth Street, New York, has acquired three-story building on two-acre tract on Alley River, near Bayside, L. I., and will remodel for new plant for increased production.

Western Electric Co., 195 Broadway, New York, a subsidiary of American Telephone & Telegraph Co., plans new branch plant on Mougey Avenue, Cincinnati, including storage and distributing divisions. Cost over $150,000 with equipment.

Titanium Pigment Co., Inc., 111 Broadway, New York, affiliated with National Lead Co., same address, has let general contract to Wigton-Abbott Corp., 143 Liberty Street, for one-story additions to mill at Sayreville, N. J., about 140 x 150 ft., for expansion in wet-milling, digester and other divisions. Cost over $125,000 with equipment.

Signal Corps Procurement District, Army Base, Fifty-eighth Street and First Avenue, Brooklyn, asks bids until Aug. 14 for control units, keys, socket caps, etc. (Circular 10).

Coca-Cola Bottling Co., 431 East 165th Street, New York, plans one-story mechanical-bottling plant at 619-25 East Nineteenth Street, extending through to East Twentieth Street. Cost about $75,000 with equipment. H. Graig Severance, Inc., 36 West Forty-fourth Street, is architect and engineer.

Commercial Solvents Corp., 230 Park Avenue, New York, has begun one-story addition to plant at Terre Haute, Ind., in part for storage and distribution. Cost over $50,000 with equipment.

Bureau of Supplies and Accounts, Navy Department, Washington, asks bids until Aug. 7 for two electric arc welding sets (Schedule 8472) for Brooklyn Navy Yard; until Aug. 4, relief valves and spare springs (Schedule 8463) for Brooklyn and Philadelphia yards.

Colonial Beacon Oil Co., 30 Rockefeller Plaza, New York, plans new bulk oil storage and distributing plant at Newburgh, N. Y. Cost over $50,000 with steel tanks and other equipment.

Commanding Officer, Watervliet Arsenal, Watervliet, N. Y., asks bids until Aug. 7 for alloy steel forgings, lining tube for 12-in. gun (Circular 11); until Aug. 13 snap and twin ring gages (Circular 14).

Phelps-Dodge Copper Products Corp., 40 Wall Street, New York, has approved plans for additions to copper refinery at Douglas, Ariz., including new reverberatory furnace unit and auxiliaries, waste boiler equipment, etc. Cost about $300,000. H. A. Clark is manager of smelter division.

Sheffield Mfg. Co., 120 Coit Street, Irvington, N. J., manufacturer of safety razor blades, has leased building at 538-40 South Tenth Street, extending to Blum Street, for new plant. Present works will be removed to new location and additional equipment installed.

P. Ballentine & Sons, 57 Freeman Street, Newark, N. J., has plans for three-story addition to brewery. Cost over $75,000 with equipment. J. S. Shanley, 33 Washington Street, is architect.

Commanding Officer, Ordnance Department, Frankford Arsenal, Philadelphia, asks bids until Aug. 6 for one automatic band-turning lathe (Circular 12), one motor-driven centerless grinder (Circular 13), one hydraulic banding press for 5-in. shell (Circular 14).

East Mauch Colliery Co., East Mauch Chunk, Pa., plans early rebuilding of coal breaker recently destroyed by fire. Cost close to $50,000 with elevating, conveying and other mechanical equipment.

Bureau of Supplies and Accounts, Navy Department, Washington, asks bids until Aug. 4 for one diesel engine-driven cargo oil pump with spare parts (Schedule 8454), four hydraulic pumps and spare parts, and eight hydraulic motors (Schedule 8471), 50 dozen power hacksaw blades (Schedule 8476); until Aug. 7, one motor-driven variety wood-working machine (Schedule 8505), spare parts for airplanes (Schedule 900-9844) for Philadelphia Navy Yard.

NEW ENGLAND

Bureau of Supplies and Accounts, Navy Department, Washington, asks bids until Aug. 4 for three 25,000-lb. stockless anchors for Fore River Station, Mass., and Sewall's Point yard (Schedule 8450).

Connecticut Light & Power Co., Hartford, Conn., plans early rebuilding of hydroelectric power plant at Willimantic, Conn., used for emergency service in eastern Connecticut district, destroyed by flood a few months ago. Cost over $200,000 with equipment.

Merrimac Chemical Co., Everett, Mass., has asked bids on general contract for two and three-story and basement addition, 50 x 125 ft. Cost over $85,000 with equipment. Company is affiliated with Monsanto Chemical Co., St. Louis.

Commanding Officer, Ordnance Department, Springfield Armory, Springfield, Mass., asks bids until Aug. 10 for one machine for resetting band saw teeth, hand saw setter and retoothing machine for hand saws (Circular 5).

Landers, Frary & Clark, New Britain, Conn., manufacturers of electric heating and cooking appliances, hardware specialties, etc., have let general contract to A. F. Peaslee, Inc., 15 Lewis Street, Hartford, for six-story addition, 60 x 300 ft. Cost over $200,000 with equipment. W. F. Brooks, Lewis and Gold Streets, Hartford, is architect.

American Brass Co., Waterbury, Conn., has let general contract to J. A. Bishop, Turks Head Building, Providence, R. I., for one-story and basement factory branch, storage and distributing plant, 80 x 150 ft., at Providence. Cost close to $60,000 with equipment. J. Peter Geddes, 2nd, Hospital Trust Building, Providence, is architect.

Holo-Krome Screw Corp., Bristol, Conn., has awarded contract to R. G. Bent Co., 93 Edwards Street, Hartford, for saw-tooth type manufacturing unit, 82 x 200 ft., two-story heat treating room and other plant improvements.

BUFFALO DISTRICT

Farnham Mfg. Co., 36 Indiana Street, Buffalo, manufacturer of elevating and conveying machinery, special machinery and parts, has leased for new plant building and adjoining property at Seneca and Elk Streets, providing large increase in present manufacturing space.

Eastman Kodak Co., Kodak Park, Rochester, N. Y., will begin superstructure for five-story and basement addition, 120 x 565 ft., for which award for structural steel was let recently to Jones & Laughlin Steel Corp. Cost about $500,000 with equipment.

Bell Aircraft Corp., 2050 Elmwood Avenue, Buffalo, manufacturer of airplanes and parts, occupying part of former plant of Consolidated Aircraft Corp., is arranging for lease of 70,000 sq. ft. additional space, making total plant area of 150,000 sq. ft., for expansion in parts production and assembling departments. Company has authorized financing to total about $500,000, considerable part of fund to be used for purpose noted.

SOUTH ATLANTIC

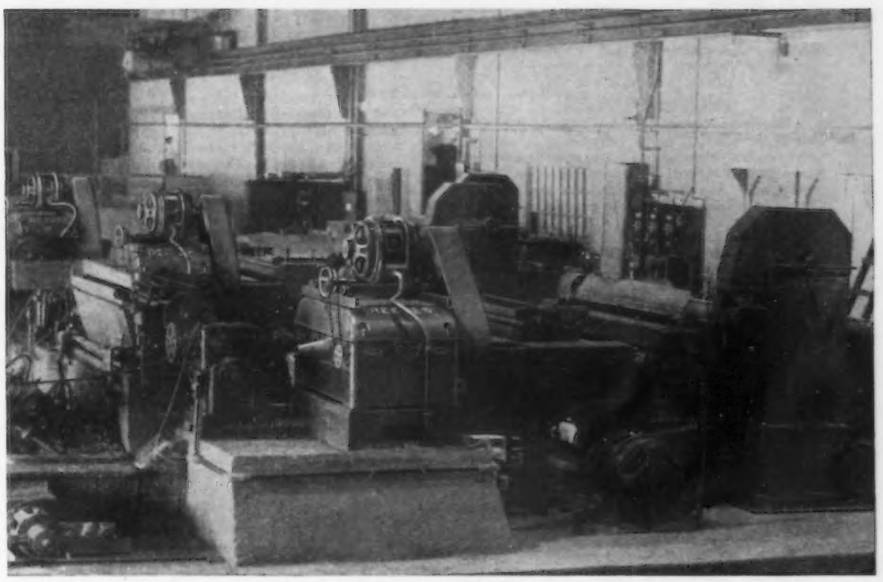
International Harvester Co., Motor Truck Division, 606 South Michigan Avenue, Chicago, plans one-story addition to branch plant at Charlotte, N. C., to double present capacity. Cost over $60,000 with equipment. J. N. Martin is branch manager at Charlotte.

Western Electric Co., 638 Lee Street, S.W., Atlanta, Ga., and 195 Broadway, New York, has asked bids on general contract for one-story addition to factory branch, storage and distributing plant, including improvements in present unit. Cost close to $50,000 with equipment.

Board of Greenwood County Commissioners, Finance Board, Greenwood, S. C., asks bids until Aug. 17 for 110 miles of

REEVES SPEED CONTROL GIVES NEW ACCURACY IN TIN POT FEEDS

Operating 24 Hours a Day, Three Enclosed Design REEVES Transmissions Provide Tin Pots in Ohio Mill with Instant, Accurate Changes in Feed Roll Speeds.



Application of Reeves Variable Speed Transmissions—horizontal enclosed design with centralized lubrication—at Empire Sheet and Tin Plate Company, Mansfield, Ohio

NEW HIGH IN PRODUCTION ... NEW LOW IN "WASTERS"

● THREE new tin pots at Empire Sheet & Tin Plate Co., Mansfield, Ohio, are each driven at adjustable speeds through REEVES Variable Speed Transmissions, operating 24 hours a day.

While giving instant changes in feed roll speed as required by differences in gauge of sheets, these modern, enclosed design REEVES Transmissions maintain absolute *positiveness* in a given roll speed. Result: minimum number of wasters at the inspection table PLUS higher production rate than ever before attained.

The Driving Connections

The constant speed (power input) shaft of the REEVES is driven by sheave pulleys from a constant speed motor. The variable speed (power output) shaft is connected through flexible coupling to a speed reducer which drives the feed rolls, through roller chain and sprockets, to give sheet travel of from 300 to 450 inches per minute.

Decision was made to use REEVES Transmissions and constant speed a. c. motors although d. c. was available in the mill. Factors responsible for this decision were: greater over-all operating economy of the a. c.-REEVES equipment . . . and the need for a drive not only extremely flexible in the speed adjustability provided, but also absolutely *positive* in maintaining a given feed roll speed without fluctuation.

Dependable Speed Control

Here, as in thousands of other installations in nearly every field of industry, the dependability of REEVES Speed Control is convincingly demonstrated. The REEVES principle, proved by many years' experience, has had many imitators—the greatest tribute that could be paid to its correctness.

The modern line of REEVES Speed Control equipment is built on three basic units—the Variable Speed Transmission, the Vari-Speed Motor Pulley and the Vari-Speed Motodrive. Complete information on each will be sent on request.

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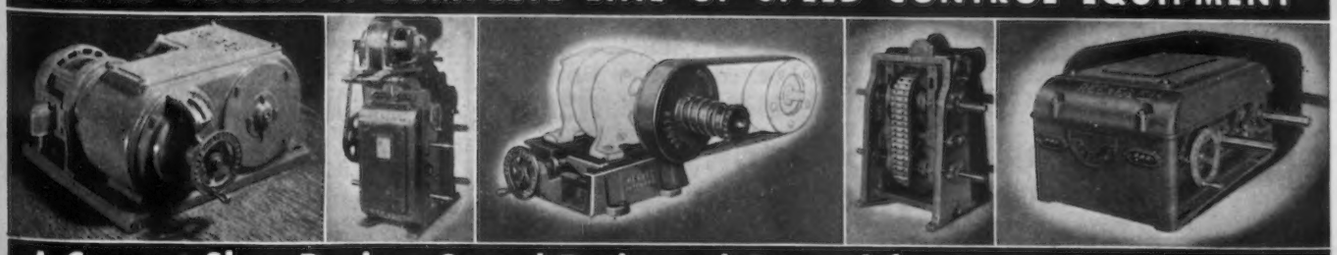

A Correct Size, Design, Speed Ratio and Control for Every Requirement

transmission and distributing lines in Greenwood County for rural electrification with service facilities. Fund of $106,000 has been secured through Federal aid. Daniel T. Duncan, Greenwood, is engineer.

WESTERN PA. DIST.

G. W. Klages & Son, 2230 Koerner Avenue, Pittsburgh, glass-cutting and beveling machinery and parts, have acquired property, 100 x 216 ft., on Sarah Street, Southside, as site for one-story plant; superstructure to begin at once. Cost about $50,000 with equipment.

H. J. Heinz Co., 1062 Progress Street, Pittsburgh, canned food products, plans one-story factory branch, storage and distributing plant at Medina, N. Y. Cost about $45,000 with equipment.

Allegheny County Home, Woodville, Collier Township, Pa., J. Clyde Miller, president, asks bids until Aug. 6 for boilers and boiler plant equipment for power house at institution. Joseph Breslove, Oliver Building, Pittsburgh, is consulting engineer.

SOUTHWEST

White Eagle Oil Co., Federal Reserve Bank Building, Kansas City, Mo., will soon take bids on revised plans for new three-story bulk oil storage and distributing plant. Cost close to $90,000 with steel tanks and other equipment. J. C. Clark is company engineer.

Frank W. Banfield & Son, Deering, Kan., manufacturers of commercial fertilizers, oils, greases, etc., have acquired former packing plant of O'Brien Packing Co., Dawson, Okla., on site near city, and will remodel for new branch factory. Cost about $55,000 with tanks and other equipment.

Sterling Machinery Corp., 411 Southwest Boulevard, Kansas City, Mo., manufacturer of air compressors, pumps, parts, etc., has let general contract to L. A. Taylor, City Bank Building, for remodeling and improving two-story building on adjoining site, recently leased, including one-story unit to connect both structures. Cost about $45,000 with equipment.

Skelly Oil Co., Twenty-fifth Street and Madison Avenue, Kansas City, Mo., has asked bids on general contract for bulk oil storage and distributing plant at Kinsley, Kan., including one-story building, dock, four 3000-gal. steel tanks, pumping machinery and other equipment. Cost close to $75,000.

Superior Mattress & Spring Co., 3828 Harrisburg Boulevard, Houston, Tex., manufacturer of bed springs, etc., plans one-story plant, 60 x 125 ft., on North Paige Street, with equipment to double present capacity. Cost about $40,000 with machinery.

Hawthorne Bit & Tool Co., Conroe, Tex., manufacturer of oil-well drilling equipment, parts, etc., has let general contract to George P. Kennedy, Houston, Tex., for initial one-story units for new plant on three-acre tract at Houston, recently acquired, for parts production and assembling. Cost about $50,000 with machinery. Present works will be removed to new location.

City Council, Electra, Tex., plans new municipal electric power plant and distributing lines. Fund of $221,800 has been secured through Federal aid. It is proposed to begin work soon.

OHIO AND INDIANA

General Electric Co., Nela Park, Cleveland, has let general contract to Sam W. Emerson Co., 1836 Euclid Avenue, for one-story top addition to present two-story factory unit at electric lamp works, also improvements in existing building. Cost over $70,000 with equipment.

Salmer Corp., 2686 Lisbon Road, Cleveland, liquor distiller, has leased six one-story buildings near present distillery and will remodel for expansion. Equipment installation, including distilling machinery and auxiliary apparatus, will cost about $50,000.

Inland Mfg. Co., 2727 Inland Avenue, Dayton, Ohio, manufacturer of steering wheels and other automobile equipment, a division of General Motors Corp., has let general contract to Frank Messer & Sons, Inc., 2515 Burnett Avenue, Cincinnati, for one-story addition, about 175,000 sq. ft. floor space, for expansion in manufacturing department, storage and distribution. Cost about $350,000 with equipment. Hillsmith & Co., 108 East Third Street, are consulting engineers.

L. F. Serrick, Inc., Defiance, Ohio, manufacturer of screw machine products, automotive parts, etc., has acquired controlling interest in Defiance Screw Machine Products Co., manufacturer of kindred specialties, with local three-story plant, where operations will be concentrated and expanded. L. F. Serrick is head.

Contracting Officer, Materiel Division, Army Air Corps, Wright Field, Dayton, Ohio, asks bids until Aug. 4 for 75 engine control assemblies (Circular 24); until Aug. 6, 1000 starter assemblies, 1000 switch assemblies, 1000 booster coil assemblies, etc. (Circular 12); until Aug. 7, switch and coil base assemblies, base utility switch mountings, cam tail wheel locking arms, smoke screen apparatus discharge valve springs, bell crank springs, plunger springs, tow target windlass external gears, tow target windlass external gear housings and other equipment (Circular 15), three 30-hp. oil pumps (Circular 36).

Board of Public Works, Portland, Ind., plans new municipal electric power plant and distributing system. Fund of $192,600 has been secured through Federal aid. It is proposed to begin work soon.

W. J. Wittekindt Brewing Co., 200 West Morgan Street, Evansville, Ind., has let general contract to Rust Construction Co., Furniture Building, for five-story addition to brewery, 88 x 150 ft., and improvements in present units. Cost close to $150,000 with equipment. Konrad Keil, 1215 Windsor Drive, Dayton, Ohio, is engineer.

WASHINGTON DIST.

American Pigment Corp., Bedford, Va., will begin superstructure for new one-story plant, 60 x 300 ft., in Hiwassie district, Pulaski, Va. Cost over $50,000 with equipment. Present plant will be removed to new location and capacity increased.

Bureau of Yards and Docks, Navy Department, Washington, asks bids (no closing date stated) for two surface condensers, air-ejector and two motor-driven condensate pumps for 6000-kw. turbo-alternator at Norfolk Navy Yard (Specifications 8239); until Sept. 30, steel floating drydock, 1016 ft. long and 165 ft. beam, at Pearl Harbor yard, Hawaii (Specifications 8228). Fund of $10,000,000 has been authorized for last noted structure, including machinery.

General Purchasing Officer, Panama Canal, Washington, asks bids until Aug. 5 for four rotary air blowers and 20 meter-testing blocks (Schedule 3167); until Aug. 7, 62,000 ft. wire rope, 5000 ft. towing wire rope, 3000 ft. wire tiller rope, 12,560 ft. brass pipe, 5000 ft. ¼-in. galvanized wire rope, 25,800 lb. soft steel wire, galvanized, 70,500 lb. common wire nails, 23,000 lb. steel wire nails, 10,000 lb. steel wire roofing nails, 500 lb. copper wire nails, 2000 lb. slating nails, tubular steel desks and seats, steel files and other supplies (Schedule 3168).

Bureau of Supplies and Accounts, Navy Department, Washington, asks bids until Aug. 4 for vacuum, compound and duplex pressure gages (Schedule 8441) for Eastern and Western navy yards; motor-generator sets, control appliances and spare parts (Schedule 8447), steel shafts (Schedule 8470); until Aug. 7 for mufflers, evaporators, distillers and spare parts (Schedule 8469) for Portsmouth, Va., and Mare Island, Cal., yards; one power-operated bending machine (Schedule 8473) for Ostrich Bay Naval Station.

SOUTH CENTRAL

Fairfield Distillery Co., 234 East Main Street, Louisville, has let general contract to Roy Edwards Co., Bardstown, Ky., for six-story storage and distributing building, about 10,000-bbl. capacity, at site of new distillery, Bardstown. Cost over $60,000 with equipment. Other plant units will be built soon. Walter C. Wagner, Breslin Building, Louisville, is architect and engineer.

Pike Floyd Coal Co., Betsy Layne, Floyd County, Ky., plans rebuilding tipple and part of coal-mining plant recently destroyed by fire. Loss close to $100,000 with machinery.

Armour & Co., Riverside Boulevard and West Trigg Street, Memphis, Tenn., meat packers, have asked bids on general contract for four-story addition, 70 x 75 ft. Cost close to $100,000 with equipment. Company also plans early erection of one-story tank house for fat rendering. Henry J. Kramer, 1756 Vinton Avenue, is asso-

THE STARTING POINT *of*

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FORGINGS

CARBON-ALLOY AND SPECIAL BASIC ELECTRIC STEELS

COMPLETE control of all processing from selection of the melting charge to the finished condition is the N. F. & O. *guarantee of quality* in forgings furnished to your specifications—Smooth Forged, Hollow Bored, Rough or Finished Machined.

NATIONAL FORGE AND ORDNANCE CO.

IRVINE, WARREN COUNTY, PENNA., U. S. A.

ciate architect. Company headquarters are at Chicago.

Industrial Minerals Corp. of America, Inc., 220 Delaware Avenue, Buffalo, has leased former plant of Chinn Mineral Mining Co., near Harrodsburg, Ky., and will remodel for barytes mining and milling plant, including installation of crushing, grinding and other machinery.

Tung Oil Co., Inc., Mobile, Ala., care of J. G. Espalla, president, Home Realty Co., Mobile, head, has acquired property at Royal and Maryland Streets for new plant, including crushing, extraction, storage and distributing units. Cost over $45,000 with equipment.

Tennessee Valley Authority, Knoxville, Tenn., plans high-tension power substation and transmission lines at Jackson, Tenn., for service in west Tennessee area. Cost about $200,000 with equipment.

MICHIGAN DISTRICT

Tyler Sales Fixture Corp., Niles, Mich., steel store racks and other steel store equipment, has let general contract to Williams Brothers, Inc., Niles, for one-story addition. Cost about $75,000 with equipment.

Chrysler Corp., Detroit, plans erection of a new automobile plant for daily production of 500 De Soto cars at a cost of $5,000,000. It will consist of one existing building which is being remodeled for assembly, and a new press building for sheet metal stampings. Both will be equipped with new machines, tools and other facilities. Production will begin on 1937 models.

Simplicity Pattern & Engineering Co., Durand, Mich., manufacturer of mechanical equipment, has plans for one-story addition. Cost about $40,000 with equipment. John MacKenzie, Flint, Mich., is architect.

City Council, Bay City, Mich., J. Harry Nelson, city manager, plans bond issue of $550,000 for new municipal electric power plant. Early election will be held to approve project.

MIDDLE WEST

National Regulator Co., 2301 North Knox Avenue, Chicago, manufacturer of temperature regulators, thermostatic control devices, etc., has let general contract to John Jilker, 230 East Ohio Street, for one-story addition, 36 x 150 ft. Cost over $45,000 with equipment. J. C. Sherrick, 333 North Michigan Avenue, is architect.

Spengler Mfg. Co., 636 Race Street, Rockford, Ill., screw machine products, has let general contract to Linden & Sons, Inc., 1102 Tenth Street, for one-story machine shop, 50 x 85 ft.

Wilson & Co., Inc., Union Stock Yards, Chicago, meat packer, has let general contract to Robert W. Scott, Home Investment Building, Albert Lea, Minn., for four-story branch plant at Albert Lea, 110 x 150 ft. Cost about $300,000 with equipment.

United States Engineer Office, Duluth, Minn., asks bids until Aug. 4 for one seven-cu. ft. portable, gasoline engine-driven concrete mixer (Circular 5).

Wood Conversion Co., First National Bank Building, St. Paul, Minn., manufacturer of insulating board, heavy building papers, etc., plans additions and improvements in mill at Cloquet, Minn., including equipment. Cost about $150,000 with machinery. E. W. Davis is general manager.

Iowa Electric Co., Cedar Rapids, Iowa, plans hydroelectric power plant at dam on Wapsipinicon River, near Anamosa, Iowa, including extensions in transmission lines. Cost over $150,000 with equipment.

Progressive Packing Co., 1139 West Forty-seventh Street, Chicago, meat packer, has asked bids on general contract for one-story addition and improvements in present plant. Cost over $50,000 with equipment. A. Epstein, 2001 West Pershing Road, is engineer.

Chicago Flexible Shaft Co., 5600 West Roosevelt Road, Chicago, manufacturer of electric-operated household appliances, clipping machines, etc., has acquired about 24,000 sq. ft. floor space in former plant of Willys-Overland Co., Ltd., West Toronto, Ont., with 1½-acre tract for future expansion. Company will remove its subsidiary, Flexible Shaft Co., Ltd., 349 Carlaw Avenue, Toronto, to new location and increase production.

PACIFIC COAST

Studebaker-Pacific Corp., Central Manufacturing District, Los Angeles, has let general contract to William P. Neil Co., 4671 East Forty-ninth Street, for one-story addition to automobile assembling works, 210 x 557 ft., for new body division, including parts production and assembling. Cost about $1,000,000 with machinery. Harry T. Miller, 4814 Loma Vista Street, is architect. Company is a subsidiary of Studebaker Corp., South Bend, Ind.

Bureau of Supplies and Accounts, Navy Department, Washington, asks bids until Aug. 7 for brass or bronze unions (Schedule 8453) for San Diego and Portsmouth navy yards; until Aug. 11, high-speed twist drills (Schedule 8467) for San Diego yard; one motor-driven milling machine (Schedule 8464) for Thorne, Cal., Naval Station; until Aug. 8, 11,200 lb. propeller shafting (Schedule 8494) for Mare Island yard; until Aug. 14, for 8000 lb. medium carbon steel nuts (Schedule 8497) for Puget Sound yard.

Union Autographic Register Corp., Union and Nineteenth Streets, Oakland, Cal., manufacturer of register equipment and devices, parts, etc., will soon take bids on general contract for one and two-story plant, 120 x 260 ft. Cost about $150,000 with equipment. Pereira & Pereira, 333 North Michigan Avenue, Chicago, are architects.

Italian Swiss Colony, Asti, Sonoma County, Cal., plans extensions and improvements in winery, including new buildings and equipment. Company has arranged stock issue to approximate $200,000, considerable part of proceeds to be used for purpose noted.

American Distillery, Inc., Sausalito, Cal., plans extensions and improvements in distilling plant, with equipment for increased output; also storage and distributing facilities. Cost over $85,000 with equipment.

Shell Chemical Co., Pittsburg, Cal., has let general contract to Barrett & Hilp, 918 Harrison Street, San Francisco, for one-story addition, 120 x 180 ft., primarily for storage and distribution. Cost close to $75,000 with equipment. Company is affiliated with Shell Oil Co., San Francisco.

FOREIGN

Australian Iron & Steel Co., Ltd., Port Kembla, New South Wales, Australia, has acquired large tract adjoining local works, for several one-story additions, on which work will begin soon. Cost close to $5,000,000 with equipment. Company is also considering division for production of automobile chassis. It is a subsidiary of Broken Hill Proprietary Co., Ltd., Melbourne, Australia.

Soviet Russian Government, Moscow, Oil Trust, has authorized new oil refinery at Baku on Caspian Sea, with initial daily capacity to process about 35,000 bbl. crude oil from Bibi-Eibat oil field district. A gasoline refinery will be located on same site, to recover such product from natural gas. Entire project will cost over $500,000 with equipment, all of which will be secured in United States. Petroleum Engineering Co., Inc., Tulsa, Okla., and Arthur G. McKee & Co., 2422 Euclid Avenue, Cleveland, are engineers. Amtorg Trading Corp., 261 Fifth Avenue, New York, is official buying agency.

Commissioner, New South Wales Railways, 19 York Street, Sydney, Australia, asks bids until Sept. 9 for one 3125-kva. electric alternator with accessories for Lithgow power station (Specification No. 957).

Mass & Waldstein Co., Newark, N. J., and 420 Lexington Avenue, New York, has placed on the market an air-drying lacquer enamel designed for finishing zinc and aluminum die castings. The enamel comes in gloss and egg-shell sheens and in white, black and 32 standard shades.

Made without scrap especially for the foundry and malleable trade

J&L STEEL

JONES & LAUGHLIN STEEL CORPORATION
AMERICAN IRON AND STEEL WORKS
PITTSBURGH, PENNSYLVANIA

American Steel & Wire Co. Workers Favor Present Representation Plan

EMPLOYEES of the American Steel & Wire Co., Pittsburgh District have expressed satisfaction with the employee representation plan through their elected representatives. In order that the views of the steel workers and that the employee representation plan in effect at the plants of the American Steel & Wire Co. in the Pittsburgh district might be given to the public in the same manner that the drive now being conducted by the Committee for Industrial Organization is being given, the following resolution has been adopted by the Pittsburgh district council of the employee representation plan of the company:

The members of said council are the duly elected representatives of the 5100 employees of the five plants of the American Steel & Wire Co. in the Pittsburgh district located as follows: Allentown, Pa.; Rankin, Pa. (one plant each), and three plants at Donora, Pa.

The representatives were elected last June by secret ballot, and the elections were conducted entirely by the employees themselves, with no participation whatever by management. Based upon the high percentage of voters taking part in this election and from their continued expression of confidence in their elected representatives and in the plan, we herewith state that the plan has been an effective means of collective bargaining with management, and are confident that its effectiveness will continue to increase to the end that all things which are for the best interests of the employees will eventually be secured.

The committee at this time wishes to point out some of the benefits which have been obtained through collective bargaining under the employee representation plan:

Vacations with pay.

Change in the pay-day schedule from twice a month to every other Friday.

There have been obtained better working conditions, also improved sanitary conditions, including lockers, washrooms, and necessary equipment. Have sponsored safety and secured installation of safety equipment.

At some of the plants mutual benefit societies and health and accident insurance organizations have been formed, while at others, plans are under way for these activities.

Credit unions have been sponsored and organized at some plants, which have been of untold value in assisting the employees not only to save money, but to obtain funds for provident and productive purposes. At those plants, where credit unions are not established, plans are going forward for the establishment of same.

Participation in cost of group insurance by the United States Steel Corp. and the increased amounts carried over the original maximum that the corporation intended each employee could carry, is a direct result of negotiations through the employee representation plan. Have maintained the standard 8-hr. working day.

The accomplishments above listed and the working of the plan proceeds without strife, loss of time, and without cost to the employees.

The employee representation plan provides that any employee may, if he desires, personally consult with management on any matter which may affect him. It also endorses promotions to higher positions of responsibility based upon the individuals' qualifications.

The plan specifically states that anyone, whether an employee or not, other than an official of the company may be elected and serve as a representative. Notwithstanding, at the recent elections held in June, the employees expressed their loyalty to the employee representation plan by choosing their own fellow workmen as representatives, in many instances for second, third and fourth terms.

All committee meetings are held in private and all action of the representatives, either individually or collectively, is taken in an independent manner without fear that his individual relations with the company may be affected in the least degree.

In conclusion, the committee states that they and the men whom they represent, firmly believe the employee representation plan is the best means of collective bargaining, and it is their desire to follow the present plan of employee representation and to be allowed to continue to work without interference from any source.

Normalizing Tubes

(CONCLUDED FROM PAGE 22)

a means of handling the tubing. Each rack is composed of two separate squared-U-shaped units composed of two vertical members and one cross member. The vertical members are square tubular sections with tapered drop forged members welded in the top that are provided with slots for the crane hooks. The crane is equipped with a special handling device of four hooks, each pair of hooks taking one of the individual U racks and accurately spacing the racks.

When one pair of racks is directly above the pair of racks beneath it may be nested on top of the lower pair of racks, as the tapered drop forgings at the ends of the racks beneath enter the vertical members of the set of racks above it. There is space beneath the roof for four of these tiers of racks. The racks provide not only a convenient method of handling the tubes, but also a storage system that requires the minimum amount of space for the reason that the racks may be easily lifted out at any time by the crane and no space has to be left at the end of the racks which would be necessary were the tubes removed lengthwise.

Great Lakes
MOLDING
SANDS

Molding Sand, whether Natural or Synthetic, should have a definite texture, flowability, cohesiveness, permeability, refractoriness and durability in order to produce good castings, fast molding, excellent finish, and minimum scrap.

We have sands that meet these six requirements!

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Many of the best known and largest production and jobbing foundries in the country have standardized on sands and rebonding materials recommended by us.

An invitation from you to have one of our staff call to investigate your operation and make suggestions places you under no obligation. Write or wire us today.

GREAT LAKES FOUNDRY SAND CO.
Foundry, Metallurgical and Sand Blast Engineering Service
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